DOCUMENT RESUME

ED 409 639 EA 028 496

TITLE	Knowledge Bases for Education Policies. Proceedings of a Conference (Maastricht, The Netherlands, September 11-13, 1995).
INSTITUTION	Organisation for Economic Cooperation and Development, Paris (France). Centre for Educational Research and Innovation.
REPORT NO	ISBN-92-64-14895-7
PUB DATE	96
NOTE	167p.
AVAILABLE FROM	OECD Publications and Information Center, 2001 L Street N.W., Suite 650, Washington, DC 20036-4922 ($37).
PUB TYPE	Collected Works - Proceedings (021)
EDRS PRICE	EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Decision Making; *Educational Policy; Elementary Secondary Education; Foreign Countries; Higher Education; *Information Needs; *Policy Formation; Research and Development; *Research Needs; *Research Utilization
IDENTIFIERS	*Centre for Educ Research and Innovation (France); *Organisation for Economic Cooperation Development

ABSTRACT

The forms of knowledge that are relevant to education are diverse as well as complex. In 1995 the CERI, the Dutch Ministry of Education, Culture and Science, and the Belgium Flemish Ministry of Education held a conference in Maastricht to examine ways in which educational research-and-development systems functioned in various countries. Specifically, the conference sought to understand the role of different sources of knowledge in education policymaking and to explore the ways in which knowledge might be better used. The conference concluded that the knowledge bases for educational decision making are diffuse and often poorly understood. Part 1 of this report summarizes the main points of the Maastricht conference; part 2 presents the various contributions from speakers covering a wide range of experiences in different countries. The presentations dealt with the information needs of governments, the elements of the knowledge bases for policy making, and sectorial perspectives on the knowledge base. Both parts discuss issues and problems that need further analysis and clarification. (LMI)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 409 639

EA

OECD DOCUMENTS

Knowledge Bases for Education Policies

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN OTHER THAN PAPER COPY HAS BEEN GRANTED BY
J. R. West
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

EA028496

BEST COPY AVAILABLE

OECD DOCUMENTS
CENTRE FOR EDUCATIONAL RESEARCH AND INNOVATION

Knowledge Bases for Education Policies

Proceedings of a Conference held in Maastricht, The Netherlands on 11-13 September 1995

PUBLISHER'S NOTE
The following texts are published in their original form to permit faster distribution at a lower cost.
The views expressed are those of the authors,
and do not necessarily reflect those of the Organisation or of its Member countries.

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

Pursuant to Article 1 of the Convention signed in Paris on 14th December 1960, and which came into force on 30th September 1961, the Organisation for Economic Co-operation and Development (OECD) shall promote policies designed:

- to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the development of the world economy;
- to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development; and
- to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.

The original Member countries of the OECD are Austria, Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The following countries became Members subsequently through accession at the dates indicated hereafter: Japan (28th April 1964), Finland (28th January 1969), Australia (7th June 1971), New Zealand (29th May 1973), Mexico (18th May 1994), the Czech Republic (21st December 1995) and Hungary (7th May 1996). The Commission of the European Communities takes part in the work of the OECD (Article 13 of the OECD Convention).

The Centre for Educational Research and Innovation was created in June 1968 by the Council of the Organisation for Economic Co-operation and Development and all Member countries of the OECD are participants.

The main objectives of the Centre are as follows:

- *to promote and support the development of research activities in education and undertake such research activities where appropriate;*
- *to promote and support pilot experiments with a view to introducing and testing innovations in the educational system;*
- *to promote the development of co-operation between Member countries in the field of educational research and innovation.*

The Centre functions within the Organisation for Economic Co-operation and Development in accordance with the decisions of the Council of the Organisation, under the authority of the Secretary-General. It is supervised by a Governing Board composed of one national expert in its field of competence from each of the countries participating in its programme of work.

© OECD 1996
Applications for permission to reproduce or translate all or part of this publication should be made to:
Head of Publications Service, OECD
2, rue André-Pascal, 75775 PARIS CEDEX 16, France.

Foreword

As part of its work on educational research and innovation, CERI is concerned to ensure that education systems are developed from a well-informed stand-point. It is rash to implement educational change without a good knowledge of what is likely to be effective. Yet in practice, educational decisions seem in many cases to be taken rather unsystematically, with no consistent reference to available knowledge bases. This may partly be because education is not an exact enough science to have developed a commonly-agreed body of wisdom. It may also be because links between those who produce knowledge and those who use it are not as close as they should be. But a third factor that is becoming increasingly apparent is that the forms of knowledge that are relevant to education, as well as the processes by which decisions are taken, are diverse as well as complex. Not all of them are reducible to formulation in scientific terms.

In search of a better understanding about the role of different sources of knowledge in education policy-making, and ways in which knowledge might be better used, CERI together with the Dutch Ministry of Education, Culture and Science and with the support of the Belgium Flemish Ministry of Education, held in September 1995 in Maastricht a conference which rounded off a three-year CERI study looking at how educational R&D systems function in various countries. The conference addressed the problem not only from the point of view of the use of R&D in policy making, but also considered the knowledge used by decision-makers that does not come directly from research findings. Two important conclusions were; firstly that the knowledge bases for educational decision-making is diffuse, and secondly that they are often poorly understood.

This publication is in two parts. Part One summarises the main points that emerged from the Maastricht conference and Part Two presents the various contributions from speakers covering a wide range of experiences in different countries. Both parts indicate issues and problems that need further analysis and clarification.

Table of Contents

Opening Remarks

Tineke Netelenbos, The Netherlands 9
Thomas J. Alexander, OECD 14

Part One: Report of the Maastricht Conference

Donald Hirsch, United Kingdom

1. Is knowledge a basis for educational policy-making? 22
2. What kind of knowledge is useful? 24
3. How can the producers and consumers of knowledge develop a better relationship? 27
4. How might CERI help develop the use of knowledge in educational decision-making? 30

Part Two: Contributions to the Maastricht Conference

1. Information Needs of Governments

1.1 Problems and issues for governments in the interaction between users and producers of knowledge 37
Claude Thélot, France

1.2 New horizons for education: Strategic information to design a knowledge base for national policy-making 42
Johan Heene, Belgium

1.3 New roles and responsibilities of governments in steering education and training: The case of higher education 52
Roeland J. In't Veld, The Netherlands

2. **Elements of the Knowledge Bases**

2.1 **Education research and US federal educational policy** 63
Barry White, United States

2.2 **Contributions of educational R&D: The case of the Netherlands** 70
Leon Henkens, The Netherlands

2.3 **Agreeing on the renewal of knowledge bases in education systems: Ideas based on international work on indicators** 74
Walo Hutmacher, Switzerland

2.4 **The role of inspectorate and country policy reviews** 86
Georg Knauss, Germany

2.5 **Knowledge: The backbone of policy-making** 90
Mark Frequin, The Netherlands

3. **Sectorial Perspectives on the Knowledge Base**

3.1 **Policy use of the knowledge bases in primary education: The case of Sweden** 97
Ulf Lundgren, Sweden

3.2 **Policy use of the knowledge bases in secondary education: The case of the Netherlands** 105
Paul van Oijen, The Netherlands

3.3 **Policy use of the knowledge bases in tertiary education: An overview** 120
Maurice Kogan, United Kingdom

4. **The Knowledge Bases for Policy-making: Policy Conclusions**

4.1 **Information needs in the policy arena: Linking educational research to the policy cycle** 141
Ray Rist, United States

4.2 **Responses**
Walo Hutmacher, Switzerland 155
Martin Roebuck, United Kingdom 158
Micheline Scheys, Belgium 162
Lynn Whitney, New Zealand 165

Closing Remarks

Luc van den Bossche, Belgium 171

OPENING REMARKS

Information needs: A Dutch perspective

by Ms. Tineke Netelenbos, State Secretary
Ministry for Education, Culture and Science
The Netherlands

I am pleased to welcome you all here to this OECD conference; and in doing so, I am also speaking on behalf of Dr. Ritzen, the Minister of Education, Culture and Science, who is currently on a working visit to Japan.

The journey from Schiphol international airport to Maastricht is long for a country this small. But there were three good reasons for asking you to make the trip. First, Maastricht is a beautiful old city, rich in culture, and located in one of the loveliest part of the Netherlands. Second, though this city is far from the centre of government, it sits in a pivotal European location, practically at the point where the German, French, and Dutch-speaking worlds intersect. How fitting it is that the controversial Treaty of Maastricht be such a milestone in the history of the young European Union. Our third reason for choosing Maastricht is its proximity to our Dutch-speaking neighbours to the south in Flanders, who played an important role in the warm reception we received -- Let me say "thank you" to our Belgian friends.

The conference theme -- Knowledge bases for national education policy-making -- is a vital one. Politicians need access to the right information to make decisions on behalf of schools, schools that are becoming more autonomous and vocal, and to successfully fulfil their parliamentary and public responsibilities. Knowledge bases can also benefit schools directly. As they develop into learning organisations, schools wish to be informed about their own strengths and weaknesses, and meet their own knowledge needs independently. This conference is all about knowledge and its importance to national policy. The three areas I personally want to address are: changes in the steering of education, R&D policy, and medium-term research priorities.

Dutch education has a long and politically-charged history. Conflict over educational freedom was even one of the reasons for the secession of the southern Netherlands last century, which led to the creation of the Kingdom of the Belgians. Our southern neighbours refused to follow the dictates of the North concerning which of their schools should be recognised by the state.

The crucial relationship between government and education in the Netherlands is still characterised by the division between public and private sector schools, which are mainly religiously basis.

Until this century, state recognition of private schools and their eligibility for state funding was a serious bone of political contention. The matter was finally settled in 1920, when the two sectors were put on the same financial footing. Today private schools have their own management boards, and public schools are the responsibility of the municipalities. Dutch schools have since, especially in the private sector, enjoyed a fairly high degree of autonomy by international standards.

The end of the "schools" conflict was a major turning point in the history of Dutch education policy. It was also the point at which the Netherlands became one of the last countries in Western Europe to create a separate Ministry of Education. Until then, the Minister for the Interior held the education portfolio.

In most areas of life, the overall trend in the 20th century has been to increase government intervention and regulation. For schools, regulation concerned the nature of the educational process and aspects of input, such as teacher qualifications and school spending.

For a long time, the main source of knowledge about developments in schools was the Inspectorate, the body responsible for supervising the implementation of regulations. In the past decade however ideas from other sources have become increasingly influential. This has resulted in three remarkable trends:

The first is a sharp reduction in the regulation of educational processes and a heavier emphasis on results. Knowledge and skill goals have now been formulated for primary school pupils and for the common curriculum in the first stage of secondary education.

Second, other actors have come to play -- or will come to play -- a more prominent part in guiding schools. The municipalities for example will be responsible for the maintenance of school buildings in both the public and private sectors, will manage local primary school support structures, and will define educational priority policy, especially in relation to the integrated youth policy aimed at helping young people "at risk".

Regional bodies now have an increasingly important role in secondary vocational education, for schools and the business community alike. Schools are increasingly called upon to introduce quality assurance. Parents therefore receive more detailed information on the quality of their children's schooling, which puts them in a better position to demand improvements where necessary.

The third trend relates specifically to knowledge. Central government is still responsible for the funding of education and hence the conditions under which the schools, with their increasing autonomy, are expected to fulfil their tasks. As central government is gradually becoming less familiar with the internal organisation of schools, it requires more general benchmarks to estimate the cost of education and specify achievement targets.

This type of knowledge is also becoming increasingly available at international levels, particularly regarding questions such as:

- How much do we spend per pupil or student in primary, secondary, and higher education sectors?
- Is the pupil-teacher ratio acceptable?
- Are our pupils receiving sufficient teaching time in school?
- Is teaching time being appropriately divided among the various subjects?
- Is the drop-out rate acceptable?
- What proportion of pupils should be receiving special or remedial help?

International comparisons are increasingly needed to answer such questions and others concerning pupil educational performance. In the first six months of 1995, the French presidency of the European Union started work on a European-wide system for quality comparison. Similar

proposals have emerged from the OECD Indicators of Education Systems (INES) project. It is our task to critically and constructively evaluate these international initiatives.

Not only does central government have something to gain from knowledge bases but also municipalities, regions, and schools. International knowledge bases can help us formulate international benchmarks for funding and other variables. There are still too few international performance benchmarks for pupils, schools, and entire educational sectors. They are certainly a worthwhile goal and represent a major challenge for the educational research community.

The Netherlands spends about 100 million guilders a year on the organisation and implementation of educational research and development, of which 30 million is imparted to development activities. The debate on educational research policy is centred on prioritisation and the allocation of 15 million guilders to educational research on a project-by-project basis.

Government, the educational profession, and the academic world dictate how these funds are used, and they have been until now the responsibility of the Institute for Educational Research in the Netherlands (SVO), a national organisation for educational research. Due to legislation and other circumstances, this construction had led to complex procedures which met with disagreement by many parties. I therefore feel it would be beneficial to decentralise the allocation of these funds. Central government and educational organisations will each receive a small portion, and most of the funds will go to the Dutch Organisation for Scientific Research (NWO), and the national science council. I assume the NWO will continue to use instruments that already work well in educational research policy.

This new situation is a challenge for us to reappraise the organisation of educational research. The OECD has compiled an interesting report on the subject, entitled "Educational Research and Development: Trends, Issues and Challenges", 1995. The options that emerge from the report raise a number of questions:

-- Is there a compromise between letting a single organisation co-ordinate all educational research and making funds available to users who pay for research services used? Is it the task of central government to establish and maintain educational research institutes, or should academic institutions, such as universities, choose the organisational form of their research?

-- To what extend has systematic consideration been given to the benefits and drawbacks of international competition for educational research budgets? The European Commission's new framework programme includes for the first time a socio-economic component with a considerable focus on educational research. The Commission believes that international comparative educational research should be intensified. Is a world-wide approach in the OECD area desirable, or is it more sensible to commence closer to home and strengthen co-operation between neighbouring countries? It would be beneficial if the OECD could compile a list of the various options for international co-operation in educational R&D.

These are some of the questions about the organisation of educational research. A second issue that seems just as important is the implementation of the results of the research. Integrating results into national policy is not easy, but what can be done to turn meaningful results into educational practice? Schools spend much time answering questions and providing researchers the opportunity to examine their efforts. But do they get value for their time?

Should we not like knowledge-intensive businesses be investing more resources into making new discoveries applicable rather than into the discoveries themselves? Are knowledge-transfer centres, such as those established for first-language and vocational training and adult education, adequate?

Will individual networks of researchers working with teachers to implement policies in schools not simply lead to excess small-scale research? There are nearly 10 000 schools in the Netherlands. With a budget of 15 million guilders, that makes 1 500 guilders per school -- which is about what a professor charges for a day's consultancy.

Should we not be investing much more time and money to account for all the research done already, especially regarding its practical application in schools?

It was recently reported that about one-third of all Dutch industrial research funding deals with problems already examined and where patents already exist. Patenting the discoveries of educational research does not seem to be a practical way forward, but a more systematic description of its results could contribute both nationally and internationally to a more economical use of scarce resources and to practical implementation. This type of knowledge base already exists in the health care sector. Are not some of the problems in education so universal that we should prioritise systematic knowledge-building at an international level?

I would finally like to discuss areas which Dutch educational research ought to prioritise in the next few years, from the viewpoint of educational policy.

The educational research budget to be transferred to the NWO next year has been largely set aside for strategic and evaluative research. It will not deal with short-term questions, but with educational priorities that will be on the future agenda.

The research agenda will be structured as follows. Three or four large cohort studies will continue or be initiated to evaluate large-scale reforms in primary or special education schools, the first and second phases of secondary and secondary vocational education, and to identify general trends in the different educational sectors. This type of longitudinal cohort study tracks pupil progress throughout higher education and in the labour market.

The second part of the agenda concerns a number of themes of which six appear here:

- pre-primary learning: the transition from playing and learning by play among four and five year-olds to real learning;
- subject-based research into teaching methods: research into the special features of learning and teaching in individual subjects and in general and vocational subjects;
- the role of educational information technology (computer-assisted learning) in the broad sense, not only regarding teaching but also testing, educational administration, development of the learning environment, etc;
- educational provision for less able pupils, those unable to follow the normal curriculum and leave school as soon as the law allows; they need to be prepared at an earlier age for participation in the labour market;

- the development of the concept of school as a "place of study", where the pupil learns actively and the teacher plays a guiding role, which is especially but not only important in preparing pupils for higher education; and

- dealing with differences between pupils.

The final part of the agenda should focus on research in the international context where establishing priorities often takes place. It involves linking up with projects such as those of the OECD, the IEA, and the European Union. It is therefore not yet possible to formulate a full programme schedule for international educational research in advance. The Netherlands has some priorities which will be raised in international discussions.

Regarding comparative indicators, such as those in the OECD INES project, there has been rapid progress with input and process indicators in the past few years. Output indicators however require further elaboration. More international reference data are needed on the future expectations of school results.

Is it possible to produce indicators that reveal the success and dropout rates in the various countries? They would need to be accompanied by information on the features of the different education systems, such as the selective function of academic certificates. Is it possible to make more frequent and simpler comparisons of the levels of pupil performance, taking account of the curriculum and the pupil's initial level? Is it sensible to have a world-wide strategy, or will small groups of countries with similar education systems find it easier to make comparisons in this area?

A third cluster of priorities is the relationship between different educational sectors and the problems of pupils in transferring from one to the other. The principal concern is the transition from primary to secondary school, the transition from the secondary to the tertiary sector, and the relationship between mainstream and special education and between regular education and lifelong learning.

Of major interest is how schools can be empowered to systematically evaluate their own quality. What benchmarks and instruments exist for this purpose? What access should schools have to a national knowledge base?

I have presented a brief account of how the Netherlands is trying to shape the knowledge necessary for steering education. It however necessarily incomplete: there is much more to say about the role of the Inspectorate in evaluating education, about the monitoring of pupils' individual learning paths, and about the monitoring of individual school performance. I have not mentioned higher education where significant advances are taking place at the management level.

We are working on important reforms in the relationship between government and schools. I hope this conference will help make the knowledge necessary for this end comprehensible and accessible to government and schools.

Let me thank those at the OECD and the SVO who prepared this conference and wish you all every success.

Information needs: the OECD perspective

by Tom J. Alexander, Director
Directorate for Education, Employment, Labour and Social Affairs and
Centre for Educational Research and Innovation (CERI)

It is a pleasure for me to address this important conference, organised by the Dutch authorities and the OECD, in co-operation with the Belgium Flemish Ministry of Education, (and as you said Minister) in such an historic and beautiful place. I am sure it will also be a source of inspiration for our discussions. I am particularly grateful to the Dutch authorities who not only have generously contributed to the organisation of this conference, but have also worked very closely with us in its design and content. I am also pleased to see that many colleagues from the OECD Education Committee and the CERI Governing Board have accepted to play a leading role in the conference. As you know, its purpose is to take stock of the analysis and findings of previous CERI work on educational R&D and, in particular, to discuss the links between different knowledge bases and educational policy-making. Our discussions will, I am sure, contribute to the preparation of our documentation for the Ministerial meeting of the Education Committee in January 1996. The theme we have taken for that meeting is "Making Lifelong Learning a Reality for All". But perhaps, of even greater importance we have to identify and clarify the issues and questions that might be usefully addressed in further work in this area in the context of a new CERI mandate for 1997 onwards.

The theme of this conference -- "The Knowledge Bases for National Education Policy-Making" -- is particularly pertinent to the OECD and to my directorate at the present time, because knowledge is becoming central, both to our concerns and to our approach. On the one hand, the OECD's analysis of economic and social development shows clearly *that knowledge and the way we use it* are becoming central to our prosperity and our success as societies. Advanced, technology-driven economies depend for their success, at least as much on the effective use of knowledge by organisations and by individuals, as on other factor inputs such as capital, land and labour. That is why education and learning have become central to the concerns of member governments and to the OECD itself.

At the same time, as *the better use of knowledge* is a major goal of public policy, it is also essential for policy-making itself to be well-grounded in a solid knowledge base. In analysing the central economic problem of member countries in the *Jobs Study* last year, the OECD underlined the need for policies to build upon national and international experiences of the effectiveness of various measures. That study helped to shift the efforts of the Organisation to emphasise the systematic collection of information about policy experience in a number of areas. In the Directorate for Education, Employment, Labour and Social Affairs, we have greatly expanded both the programme of reviews of national policies -- in terms both of individual country reviews and thematic reviews -- and the range of quantitative data that we collect -- including, of course, that of the Indicators of Education Systems (INES) project (in the documentation for this meeting, you will find some information about this project, including the 1995 OECD version of *Education at a Glance* output). In other words, empirically derived information, not just abstract analysis, is being considered vital to effective policy-making in a world that is rapidly changing and where old truths and old assumptions may not always continue to apply.

But how effectively does the education sector produce and use knowledge about itself -- especially in relation to the making of public policy? Concern at the highest level that education policy is not sufficiently grounded in a solid R&D effort has encouraged us to take this up as an issue. At a meeting in Paris in 1990, ministers of education expressed concern that the potential benefits of R&D in realising improvement and innovation had not been fully achieved.

That concern, led us in CERI, to launch the project on R&D whose first results you have before you today. A first meeting in Washington DC in 1992 identified various country specific approaches to knowledge in education systems which were explored in more depth in relation to Nordic countries at a seminar in Sunne in Sweden in 1993, and subsequently among German-speaking countries in Vienna in 1994. The resulting volume of papers that you now have in published form under the title *Educational Research and Development: Trends, Issues and Challenges* reveals that as well as cultural differences between countries there are convergences, as all of our countries try to improve the relationship between knowledge, policy and practice. Moreover, there is considerable scope for knowledge to travel internationally, and to avoid the duplication that is involved in looking only at national sources of knowledge about what works in education.

The present conference has been called both to look at the implications of this initial work for policy-makers and to discuss the new challenges that lie ahead in creating better relationships between knowledge and its applications. CERI will be seeking to renew its mandate at the end of next year, and we envisage that work on this theme will be a central priority in the new mandate. But how can our efforts best be deployed? We will be listening carefully to what you say.

There are perhaps two main interrelated challenges. The first is to ensure that the knowledge base itself is adequate and constructed in a way that is appropriate to the concerns of policy-makers and practitioners. The second is to ensure that knowledge is appropriately transmitted to those who need to use it.

First, it can be argued that the knowledge base in education is dangerously small in relation to the volume of educational activity. In countries for which figures are available, educational R&D accounts for only around a quarter of one percent of educational expenditure -- far lower than in any respectable branch of private industry.

But of course more applied educational research will be useless if it is not relevant to the key concerns of education systems. It has always been tempting for knowledge-producers to define their own agenda, by the simple expedient of defining the boundaries of knowledge itself. One of the most famous examples was perhaps an Englishman by the name of Benjamin Jowett *[pronounced JO-IT]*, a brilliant classicist, who one hundred years ago was Vice-chancellor of Oxford University and Master of Balliol College. He regularly told his students:

> "I am the master, my name is Jowett
> If it's knowledge then I know it.
> I am the master of this college
> What I don't know, isn't knowledge."

I am sure that the attitudes of academics have progressed somewhat since the time Jowett. In particular, we are, I hope, developing a flexible and pragmatic notion of what knowledge is pertinent in the education sector, in at least two respects:

First, in terms of the content of educational research. If the production of knowledge about education systems is to inform their development, it is essential for the content of academic inquiry to adapt to changing concerns. In particular, at present, this means adapting research to the emerging paradigm of lifelong learning, rather than focusing mainly on initial schooling. Our programme of work in education and policy analysis revolves around this paradigm, an emphasis that reflects what we have been hearing from ministers of education, who are aware of the importance of learning throughout the lifespan in the new knowledge-based economies. Although many people in the academic community have the imagination and vision to share this perspective, the emphasis of research, in volume terms, is still on initial schooling. It may be a hard job to change that, but such a change is urgently needed if today's policy concerns are to be supported by adequate knowledge.

The second respect in which educational research needs to be flexible is in terms of *the type of knowledge created.* As in any discipline, there will always be a role for the abstract inquiry that helps in the long-term to advance scientific understanding of the learning process. Needless to say, policy-makers look more often for knowledge with more immediate applications. There can be roles for various types of knowledge, including quantitative indicators, international policy comparisons, reports by national inspectors and various kinds of short study about the effectiveness of particular policy-relevant innovations. An important task of this conference and the work that surrounds it is to identify what roles these various types of knowledge bases can play in contributing to the national policy-making process.

But obviously we must not be content simply with addressing the concerns of policy-makers for immediate applications. We in the OECD, and you as researchers, must also pursue a research agenda that addresses longer term issues, all too often outside the time horizon of policy-makers.

I come now to the second of the two challenges that I identified earlier: *how knowledge is transmitted.* Just as important as what we know, is *how we use our knowledge.* This of course is a challenge as much for policy-makers themselves, as for knowledge-producers.

A strong theme that emerges from the papers for this conference is that knowledge production and knowledge application have been poorly articulated. Quite simply, there are often not the mechanisms to ensure that relevant knowledge is in front of policy-makers when decisions are taken.

To remedy this situation is more than a matter of ensuring that Ministers and senior officials are properly briefed on the current state of research. It implies a greater synergy between the production of research and its potential uses, to ensure that relevant and up-to-date knowledge is available at the time it is needed. It is not just a matter of policy-makers influencing the pattern of research, but of researchers heeding the pattern of policy-making. In many cases, this will increase the demand for short-cycle investigations, and increase the case for looking at new modes of knowledge production.

These are all difficult tasks that cannot be achieved overnight. It will require a collective learning process, in which knowledge producers and knowledge users work closely together, and try to understand each others concerns. (I hope that this will be the case at the present conference: as we know, Maastricht is a town with a history of producing friendly accords among parties with different views, even if it can sometimes be difficult to get those accords ratified among their constituents once the delegates return to their own countries).

I think we should bear in mind that the ultimate goal of all of us here is to avoid the enormous amount of wasted effort that will result if our education systems are misguided. We spend on average 5% of our GDP on running public education systems alone -- it is a huge responsibility to ensure that this money is well-spent. So the stakes are high, but I'm sure that we will all be working hard over the next three days on how to ensure that key educational decisions are based on sound and relevant knowledge.

PART ONE

REPORT OF THE MAASTRICHT CONFERENCE

Report of the Maastricht Conference

by Donald Hirsch, International Policy Consultant
United Kingdom

Introduction

This conference brought together various people involved in the field of education policy -- as knowledge-producers, as decision-makers and as intermediaries between knowledge and action. The aims were: to take stock of the first phase of CERI's study on educational R&D; to consider ways to improve both the state of knowledge about education and the use made of this knowledge; and to suggest further work for CERI in this field.

There was broad support at the conference for the twin ideas behind this CERI study -- that knowledge about educational systems and processes needs to be strengthened, and that better mechanisms need to be created to bring knowledge to the attention of national policy-makers. Yet there was also a fundamental challenge to any simplistic notion of the relationship between what is known and what is done in education. The concept of a "knowledge base" as a set of objective truths that indicate how best to run an education system was widely rejected. So was the outdated notion of national policy-makers using knowledge to run things from above: relationships between knowledge and action need to be considered at all levels of decentralised systems. As a result, the conference construed the knowledge-policy relationship as complex, and often situation-specific. There was a desire to understand better this complexity, in order to develop ways of encouraging the best possible use of knowledge in practice.

This report does not repeat everything that was said at the conference, but picks up some of the main common themes that emerged from it. It starts by giving a short summary of the background to the conference, and then discusses four key questions that were addressed in Maastricht:

i) Is knowledge a basis for educational policy-making?

ii) What kind of knowledge is useful?

iii) How can the producers and consumers of knowledge develop a better relationship?

iv) How might CERI help develop the use of knowledge in educational decision-making?

Background

"The ultimate goal is to avoid the enormous amount of wasted effort that will result if our education systems are misguided. We spend on average 5% of our GDP on running public education systems -- it is a huge responsibility to ensure that this money is well-spent."
Thomas J. Alexander, Director, OECD/DEELSA and CERI

CERI's study on educational research, whose first phase was carried out from 1992 to 1995, was initiated in response to the meeting of OECD education ministers in Paris in 1990. The ministers suggested that educational research had not achieved its potential for producing improvements in education systems. The study set out to examine how various governments went about sponsoring

educational R&D, and to consider ways in which it might be strengthened and made more relevant. It compared country experiences through a series of international seminars in the United States, Sweden, Portugal and Austria, and through case studies contributed by countries. It also produced indicators of national effort in educational and R&D systems, in collaboration with the Australian Council for Educational Research. A small group of experts worked with the CERI Secretariat to bring together the study's findings in an analytical report, *Educational Research and Development: Trends, Issues and Challenges* (OECD, 1995).

This first phase of work identified a number of key issues around educational R&D, common to many OECD countries. Central to the analysis were the problems created by the dual position of educational research as a scientific field of enquiry and as a servant of public education systems. There is a need for institutional structures that create a balance between rigour and usefulness, between long-term advancement of knowledge and attention to immediate problems. When deciding on R&D priorities, it was suggested that stakeholders, funders and researchers should jointly consider the agenda. The organisation and management of R&D needs to be planned to encourage this partnership; in some cases market-type relationships that create explicit relationships between knowledge producers and their clients may be appropriate. But the study also pointed to the need for the sponsors of educational R&D to create a stable and adequate knowledge base over the long term. Additional investment was needed at the national level to sustain a thorough understanding of education; there was also considerable scope for spreading wisdom across countries by improving international co-operation.

The Maastricht conference, which rounds off this first phase of the CERI study, was organised jointly by the Dutch Ministry of Education and by CERI with the support of the Belgium Flemish Ministry of Education. The event aimed not just to disseminate and discuss the R&D study's findings, but to pursue the issues further in two particular directions. One was to focus on the perspective of policy makers and the ways in which they draw on knowledge about education systems. The other was to consider as widely as possible what kind of knowledge is available to policy makers. Decisions may be informed by a variety of information sources, including direct personal experience, quantitative indicators, inspectors' findings and consultants' reports as well as by research more conventionally defined. In discussing these issues, the conference identified areas that would be of interest to ministers of education at their meeting in Paris in early 1996, and which could be pursued further by CERI in the new mandate that it is seeking from 1997.

1. Is knowledge a basis for educational policy-making?

"Politicians need access to the right information to make decisions on behalf of our schools (...).Politicians also need the right information in order to discharge their responsibilities to Parliament and the public."
Tineke Netelenbos, State Secretary for Education, Culture and Science, The Netherlands, Opening address to the conference.

It is clearly important that decisions about education take some account of existing research and experience. It would be foolish to ignore accumulated knowledge that indicates which policy strategies are likely to be effective. But education never has been and never will be an exact science. So there is no consensus over how useful or reliable knowledge in this field can be as a guide to action.

The idea of a knowledge base in the form of objective research proving simple linear relationships between certain policy actions and certain educational outcomes was generally held by conference participants to be a chimera. Relationships between knowledge and action were seen as being indirect in practice, and dependent on specific political and other circumstances. Yet behind a general agreement that it is not the job of researchers and other knowledge-producers to write instruction manuals for policy-makers lay a diversity of views about the potential role of knowledge in guiding actions.

There were at least three main sources of scepticism about the validity of a "knowledge base" for policy making. One view criticised the "positivistic" view of knowledge, asserting rather that it is highly value-laden. Since the objectives and priorities of education systems are not given, the knowledge that informs decision-making can only be treated subjectively.

A related view saw knowledge as necessarily "pluralistic", rejecting the idea that researchers or anybody else should be asked to arrive at a single set of conclusions. Although this posed no direct problems to knowledge-producers, the difficulty was that it tended to create "tribalism" within the policy world, with people in and around government making selective use of knowledge according to pre-set positions.

A third argument challenged the technical capacity of educational research to provide the answers that it once sought. The search for the "educational production function" that began in the 1960s had proven futile. Attempts to produce useful quantitative indicators of performance were flawed by the impossibility of distinguishing the impact of any one variable in complex systems whose results are influenced by external factors. In the case of student performance, for example, the value added by a school or college could not be separated from influences beyond the control of the education system.

While nobody tried to defend a "black box" approach to educational decision-making (i.e. one in which technocratic decisions could be taken in relation to a set of known relationships), a number of participants countered the sceptics with the argument that while knowledge may never be used perfectly, it is still possible to use it better. Throughout the conference, there was an attempt to understand how knowledge could contribute, alongside other factors, to the decision-making process.

First of all, it was suggested that even imperfect knowledge could provide rough-and-ready "tools" for policy-makers and practitioners, which were better than no knowledge at all. Such tools might include simplified "value-added" measures of student performance, various other quantitative indicators, the findings of inspectors and the factors shown by researchers to be most closely associated with school effectiveness. Even where research produces no clear-cut guidelines for action, it can be useful to "hold up a mirror" to the education system, to encourage it to address weaknesses. In France in 1989, for example, a nation-wide test that revealed poor early performance in geometry had the immediate effect of causing teachers to concentrate more on this subject.

Second, it was argued that knowledge could influence policy-making in certain indirect ways. Growing public interest in education, for example, could cause knowledge to affect policy-makers via public opinion. It was even suggested by one participant that while policy-makers pay less and less attention to educational research, the general public pays more and more. If it is the case that politicians are more interested in winning votes than in listening to expert advice, the public's interpretation of educational knowledge becomes critical. While there is obvious scope for the message of research becoming corrupted in this process of transmission, opinions are divided about whether such distorted or simplified knowledge is on balance helpful or counter-productive.

A third view of how knowledge influences educational policy-making is that this influence can be strong on some occasions, when political and other conditions happen to be right. For example, in the United States, the direction of federal spending on disadvantaged children had for years emphasised remedial teaching methods, even though research showed that these were ineffective. This research was acted on in 1993-1994 when there was a political will to expand and revise the programme, with the aim of achieving high standards for all groups. Knowledge in this case was a necessary but not a sufficient condition for the decision.

So some participants were more optimistic than others about the potential for knowledge to be used constructively. The differences between the optimists and the sceptics were often a question of emphasis rather than fundamental disagreements. But some sharp conflicts arose between those whose main interests were instrumentalist and those whose primary concern was with the search for truth. One policy adviser, for example, lamented that academics are too keen to emphasise their differences in opinion, rather than tell policy makers some key points that they agree on. Defenders of the plurality of knowledge feared on the contrary that an attempt to present a single viewpoint would lead to a muzzling of dissent, that would ultimately be counter-productive. The need to strike a balance between soundness and usability of knowledge created differences of emphasis among the participants at this conference, just as it does in the countries under discussion.

It also needs to be noted here that the discussion about the subjectiveness of knowledge took a different form in relation to higher education than in the case of primary and secondary education. The fact that higher education is not part of the compulsory system led some to argue that its purposes were less self-evident than those of schools. This made it harder to make value-free statements about what makes higher education effective; hence the lack of a parallel to the notion of the key factors that create effective schools. Yet "massification" has created a tension between those who see universities as autonomous institutions with a knowledge-driven agenda and those who see them as part of a publicly-accountable system for preparing young people for adulthood and work, in a way that makes best use of public money and forges partnerships with the private sector. There was some discussion about how far universities could accept a hybrid status, encompassing these two purposes, and still retain stable values with respect to the pursuit of knowledge.

2. What kind of knowledge is useful?

"There have always been some academics who believe that it is better to be rigorously wrong than to be diffusely right."
Kjell Eide, Institute for Studies in Research and Higher Education, Norway

There is a tendency when discussing knowledge to think in terms of empirically tested, rigorously argued and academically published material, labelled "scientific research". Some of this research is of direct relevance to policy makers; much of it is not. Much useful knowledge may result from enquiries other than rigorous research. An important message that emerged from the conference was that policy decisions are taken in pragmatic ways that draw on available information, but are rarely preceded by a systematic literature survey.

An underlying theme was that a diverse set of information sources is more likely to be useful to policy-makers than a monodisciplinary set of research papers. Since the research agenda is not structured around the needs of policy-making, it is unlikely to come up with relevant knowledge

in all cases where it is needed. A number of aspects of diversity in the knowledge base were explored.

Education as a social science that goes beyond pedagogy and epistemology

One challenge for academic enquiry in the field of education is to define this field in a way that makes it coherent as a discipline while drawing on other social science disciplines such as political science and sociology. If the study of education is focused on pedagogy, as for example has been the case in the German-speaking world, there is a danger that the social, political and institutional relationships that influence educational outcomes will be neglected. But the more broadly-based empirical approach of the English-speaking countries does not in itself give theoretical coherence to education as a science. This was a concern at the conference, for those with policy as well as those with research interests. There was a desire from policy advisers for more research that draws links between political and administrative processes and educational outcomes. They complained that educational researchers have in some cases been slow to study the outcomes of reforms such as decentralisation. In the United States example cited above, of federal policy responses to research on programmes for the disadvantaged, it was noted that there was no research to indicate the effectiveness or otherwise of federal government actions.

Quantitative evidence as a complement to qualitative analysis

The development of the Indicators of Education Systems (INES) project over the past seven years has helped to transform the debate about the respective uses of quantitative and qualitative knowledge with respect to education. There was a wide consensus at the conference that quantitative indicators could now play an important role in the understanding of education systems. Reservations about how much they can tell policy-makers on their own remain strong. But their potential use in conjunction with qualitative knowledge was compared to the reading of indicators on a car dashboard. The knowledge that they impart relies on prior understanding of how the engine (or education system) works, but they can help to reassure decision makers or to warn them when something is going wrong. This approach was seen as particularly appropriate in the context of devolution, under which national governments stop trying to run education systems directly, and move to more of a "steering" role. This steering depends on measuring outputs rather than controlling processes, so the demand for good quantitative measures of output is growing. In the Netherlands, it was reported that for similar reasons, statistical monitoring has become more integrated into the management of education, while laying less stress on input and throughput data.

Qualitative evidence of educational processes at many levels

Policy-makers do not just rely on academic evidence for information about the likely outcomes of their actions. As one conference participant pointed out, the context and manner in which a reform is introduced may be as important for its success as any fixed scientific relationship. Moreover, the ways in which problems are defined at a policy making level draw on informally acquired information, on individuals' experiences, on public opinion, on programme evaluation and on the evidence collected regularly by inspectors.

Many national school systems have a long tradition of direct inspection, although the extent and manner of inspection varies greatly from one country to another. A key distinction was raised between countries that use inspection for external comparison of school performance and others that use inspection merely to develop internal "supply-side" strategies for improving the system, for example through better teacher training. There is some evidence of convergence between these two

models, as countries face similar pressures -- to make schools accountable, but at the same time to give them the tools needed to perform well.

Where inspection systems have been strongest, they have traditionally relied on a high degree of professionalism in their staff. But in serving the function of external accountability, is it always desirable that inspectors be pedagogues? In England, all inspection teams must now include at least one lay person. In Sweden, where there is no tradition of a professional inspectorate, the recent development of inspection by local municipalities has tended to take on rather more of an administrative than a pedagogical character. The skills and techniques required on this side of the knowledge base depend on the purposes of inspection. If it is purely an instrument to help educators maintain a high quality of teaching, professional skills are the most important. But if one of its missions is to inform policy-makers and the public about the overall functioning of educational institutions, a wider range of approaches may be required, including the ability to look at the system from the outside.

Knowledge drawn from international as well as from national settings

Educational policy makers have historically relied heavily on knowledge drawn from the domestic national context. When they have drawn inspiration from foreign practice, it has often been on the basis of a cursory understanding of developments in selected countries. But conference participants were keen to exploit the international dimension of the knowledge base, in at least three ways. First, by pooling wisdom as different countries face similar problems. Second, by using an international template to view domestic developments in a fresh light. Finally to explore the possibility of using international "benchmarks" to assess the performance of national systems.

The commonality of certain educational trends driven by global economic competition has created considerable convergence in the orientation and goals of education systems over recent years. The quest for lifelong learning, for wider partnerships between education and outside interests, and for measurable standards of output in systems that are more decentralised in their management, has been common to most OECD countries for similar economic and social reasons. Each country's response to these challenges has depended on its own institutional and cultural background. But as reforms develop in different ways in different places, there is scope for each country to draw lessons from others' experiences about what might lie ahead. The comparative study education has hitherto been driven largely by a research agenda. The INES project marks a break from that tradition, in which research and policy interests came together in search of common ground. Its success has created an enthusiasm, apparent at the conference for wider forms of collaboration that is at least partly policy-driven.

As well as benefiting from information about other countries, policy-makers can potentially gain insight into their own system when seen through international eyes. This second benefit was pointed out in particular in relation to the OECD's country reviews. The insights of outsiders could be of benefit in this context just as they could be in the context of school inspection.

The third suggested benefit was the most ambitious, and so far the furthest from realisation. The idea of international benchmarks of educational performance was seen as an attractive objective by a number of participants. The Dutch State Secretary, Ms. Netelenbos, acknowledged that however desirable, comparisons of performance will initially be limited in scope. A number of participants showed interest in her suggestion that small groups of countries with similar educational systems may find it easiest to make comparisons of student performance.

3. How can the producers and consumers of knowledge develop a better relationship?

"The failure to come to know the logic and culture within which policy makers work leaves educational researchers continually guessing as to what is needed when, by whom and in what form."
Ray Rist, Director, Center for Policy Studies, The George Washington University, United States

"We have a divided, diverse scientific community and, on the other side, a divided, pluralistic policy arena. Perhaps the reason for researchers' frustration with policy-makers, and vice versa, is the matching problem that exists. What is the likelihood of a renowned educational scientist meeting, at the right time, a policy-maker who happens to be asking the same questions as he or she is...?"
Walo Hutmacher, Director, Research Division of Sociology, Department of Public Instruction, Geneva

"DEP tries to create to build bridges between the research world and the political world. My job is to encourage the utilisation of research, information and evaluation -- in other words, the knowledge bases of the educational system -- in policy-making and, vice versa, the fuelling of current policy issues into research and the knowledge base".
Claude Thélot, Director, Directorate for Evaluation and Prospective (DEP), Ministry of Education, Paris

It is possible to cast researchers and other information-gatherers in the role of knowledge producers, serving policy makers and others as their customers: the users of what they produce. In this market analogy, the duty of the producer is clear -- to create knowledge in response to the demands users, and to market it effectively. As noted in the OECD's analytical report on Educational R&D, quasi-markets for research already exist in many OECD countries, although they are complicated by the fact that those who commission research are not always its final users.

A great deal of the discussion in Maastricht was devoted to the complexity of the relationship between those who pursue knowledge and those who use it. Although there was a widespread desire for greater sensitivity by the former to the needs of the latter, the relationship was seen as far more complex than merely that of provider and purchaser. The most familiar point is that knowledge-producers serve a variety of short- and long-term needs. It would be impossible for human understanding to progress in the long-term if knowledge were only pursued when it related directly to action. But this reason on its own is not enough: it can be seen by policy-makers as an easy excuse by researchers to pay no heed at all to the relevance and use of their work. A number of more original issues were raised, notably:

- -- The larger number of actors now involved in the decision-making process;
- -- The degree to which knowledge is created by decision-takers in the course of their work;
- -- The need to develop a better understanding among knowledge-producers of the needs of policy-makers; and
- -- The importance of intermediaries who act as brokers between producers and users of knowledge.

Knowledge and diffuse decision-making

Devolution of decision-making in education has multiplied the points at which knowledge is needed. In some countries, such as Sweden, local government and schools are having to make decisions in domains where they have little experience or prior knowledge. At the same time, national governments are having to learn to deal with new kinds of knowledge. In particular, policy

makers are having to learn about the impact on education systems of pulling various levers designed to maintain standards of output rather than managing systems directly.

In this context, knowledge needs to be transmitted to multiple actors and to be disseminated from one part of a system to another, rather than merely being passed from a single set of researchers to a single ministry. According to one speaker, the problem now is not that too little knowledge is produced but that there is a large body of knowledge that is insufficiently well organised. Considerable concern was expressed about the capacity of individual schools to obtain relevant information. But it was hoped that teacher training would reflect the need for educators to deal with knowledge in a way that was broader than merely teaching a particular subject. This does not mean that every teacher needs to be an educational researcher in their spare time, but requires them to develop the capacity to take note of and respond to evidence from a variety of sources -- including for example that of school inspectors.

Knowledge-consumers as producers

In a decentralising system, moreover, the line between the producers and consumers of knowledge becomes ever more blurred. Most worthwhile pedagogical innovation, for example, originates from within classrooms. Similarly, managerial innovation is likely to originate "on the ground" rather than in a "laboratory". In this respect, strong dissemination of knowledge is the key.

The role of central government in this dissemination process is sometimes ambiguous. It was pointed out, for example, that there is a potential contradiction between the idea of a strong core curriculum and the hope that teachers will innovate. Governments, it was remarked, are not so much de-regulating as re-regulating. The idea is that the new form of regulation will not be as imposing as what preceded it. There will be a focus on outcomes rather than the minutiae of the process. But it was also remarked that so far, governments have found it hard to stick to the principle of a lighter form of intervention.

In order to ensure the desired outcomes, a new and complex form of regulation has often had to be introduced. In the case of the school curriculum, for example, what exactly does it mean to specify the main outcomes in terms of children's knowledge and competencies, rather than how much time they must spent on each subject? The temptation is to specify outcomes in such detail that teachers feel constrained to teach according to a certain recommended model in order to reach them. If this occurs, knowledge about the process continues to flow more consistently from the centre to the classroom, rather than from classroom innovation outwards. A comparable point was made about higher education with respect to resources. A point comes, it was argued, at which financial austerity creates a "policy prison" in which institutions' options are closed off, rather than encouraging imaginative forms of innovation.

Understanding the needs of policy-makers

Despite an acknowledgement that knowledge could be produced in many ways, the conference devoted considerable attention to the issue of how one group of professional knowledge-producers -- researchers -- could ensure that some of their output was useful in the policy context. Professor Ray Rist stated the hypothesis that the long-standing failure of the research and policy worlds to communicate effectively was due to the fact that research was always led by an academic agenda and performed according to a researcher's timetable. He suggested that researchers needed to know not just the issues that would be relevant to policy makers but also the manner in which decisions were taken, in order to ensure that knowledge was presented in digestible form at key points

in the decision-making process. He emphasised that there was no single point at which policy was made. Rather, there were various phases, of which he identified four: agenda setting, policy formulation, policy implementation and policy accountability.

The response to Professor Ray Rist acknowledged the need for a better understanding between the research culture and the policy culture. Presentation of findings in particular needed to be structured in a way that was brief, timely and well-focused on key policy problems. However, it was also argued that there were limits to how closely the research and policy worlds could or should come together. Excessive focus on the policy timetable would prevent research from being developed at a pace that allowed it to provide reliable answers to key questions. It was stressed that many of these questions recur, so the stock of accumulated knowledge would have enduring value. It was also pointed out that since policy makers are selective in the information they seek, it would be naive to imagine that producing timely and objective answers to policy questions would automatically lead to the better use of knowledge.

One speaker pointed out that the policy world has an interest in sponsoring educational research even if only a fraction of it seems directly relevant to decision-making. There is a desire be able to draw on this knowledge base in future circumstances that are unforeseeable. It is impossible on those occasions to develop, *ad hoc*, an adequate understanding of educational processes. So a broad academic competence needs to be sustained to enable questions to be addressed as they arise. The danger of this argument is that it could be used to sustain a large amount of research of dubious value. Yet a certain level of academic activity in the educational field appeared to be in the practical interest of governments.

The rise of the knowledge entrepreneur?

It was clear from the discussion described above that the relationship between the busy decision-maker and the university-based researcher would never be a close one, whatever the good intentions. The research cycle and the policy cycle could never be perfectly co-ordinated. But an interesting idea to emerge was the crucial importance of intermediaries in bridging the gap.

A significant number of participants at the conference were in fact neither pure researchers nor pure policy-makers, but people who brought knowledge to the attention of those who make decisions. A number worked within ministries or inspectorates, in advisory positions or in units responsible for brokering research. Others worked in agencies involved in advising government. These people effectively served as entrepreneurs between the two communities. They helped defined what research is needed, and had responsibility for feeding the results back to government.

One reason for the importance of the knowledge entrepreneur is precisely the question of timing raised by Professor Rist. Researchers may be persuaded to help disseminate their results when they are produced, but it is impossible to plan for perfect timeliness in an unpredictable policy cycle. It is also unrealistic to expect each researcher to be permanently involved in a dialogue with policy-makers to ensure that past results are brought to their attention at appropriate times. Given the recurring relevance of accumulated knowledge, referred to above, policy-makers need intermediaries to brief them on relevant findings at appropriate times.

It should be clearly understood that the knowledge entrepreneur needs to do more than interpret and transmit the findings of an autonomous research community. The existence of such a function does not absolve researchers from considering the uses of their work. Research that is not framed with an awareness of policy issues will rarely be useful to policy-makers, no matter who

deciphers it. Rather, the entrepreneur is a two-way intermediary, acting on behalf of the policy community to ensure that research is appropriately designed, as well as on behalf of researchers to make it properly understood.

Such entrepreneurs can potentially mediate knowledge in all directions along the "knowledge triangle" -- of knowledge producers, decision makers and practitioners. There is a potential for developing their role in the light of the decentralising trends noted above. They need to look for ways of ensuring that teachers and school principals as well as ministers and senior officials are aware of relevant developments in the knowledge base.

4. How might CERI help develop the use of knowledge in educational decision-making?

The Maastricht conference provided a first set of ideas about the ways in which CERI could perform this role most effectively. Participants helped define in general terms some of the ways in which CERI could play a distinctive role, notably:

-- By disseminating examples of the constructive use of knowledge in decision-making;

-- By identifying useful knowledge sources that go beyond traditionally-defined research;

-- By demonstrating through examples the role of the knowledge entrepreneur, and how it might be enhanced; and

-- By examining innovations in R&D systems of various countries.

An important starting point is to ask what purpose might be served by a CERI activity that gives further information about the knowledge base for educational decision-making. There has been considerable work already, both in the recent CERI activity and elsewhere, about the functioning of educational R&D systems. But as the Maastricht conference clearly showed, the ways in which knowledge in its broadest sense is used in education is still poorly understood. It seems moreover that knowledge use might vary considerably from one national culture to another, that it takes different forms in different circumstances and that it is evolving over time, particularly as tools such as evaluation and quantitative indicators grow in significance. In this context, it may be valuable to decision-takers, to knowledge-producers and to those who act as intermediaries between them for CERI to bring attention to the relationships that are emerging in various countries. As with other international comparisons of education systems, it can be instructive to see how others respond to similar challenges that are affecting all OECD countries.

Among the parameters of possible future CERI work, the following options should in particular be explored:

i) Identifying how *knowledge in forms other than pure research* is being used for decision-making -- especially in the case of new forms of knowledge, including evaluation and indicators, whose production is being supported by policy reforms. Despite an awareness, reflected in the title of the Maastricht conference, that there are knowledge bases other than the research base, a rather patchy picture emerged of exactly what those other knowledge bases look like, and how they are used. It is true that the nature and role of inspection in various countries is now relatively well understood. The INES project

has made it easier to compare quantitative data international, but there could be a demand for greater understanding about the ways in which data are used in each country. The role in decision-making of the evaluation of programmes or establishments, by governments or by independent bodies, could also be explored further. For all these types of knowledge, differing institutional arrangements in different countries create considerable variations in patterns of usage. Comparisons might focus on how satisfactory various forms of knowledge have proven to be: on the comparative effectiveness of alternative information tools available in different countries in reaching similar types of decision. In emphasising the significance of non-research knowledge, however, it would be a mistake merely to see it merely as an alternative to research. In practice, many forms of evidence can combine to influence a decision. The challenge is to find ways of combining research evidence with other knowledge to create a deeper understanding of educational processes.

ii) The development of knowledge tools appropriate for *decentralised education systems*. Localised decision-making has just as great a need of reliable knowledge as central policy-making. Yet local actors such as head teachers and local government administrators do not always have direct access to research or other forms of knowledge. It is necessary to find ways of making knowledge accessible to them. Moreover, knowledge plays an important role in the relationship between operationally autonomous local units and central regulation -- to replace legal prescription as the main control on local educational management. It is desirable to understand the basis for such evaluations and whether the tools are well chosen to produce real improvements.

iii) New roles for *knowledge entrepreneurs*. The structure of mediation between knowledge-producers and decision-makers varies greatly among countries. One benefit of holding the Maastricht conference in the Netherlands was its rich framework of institutions (presently being reformed) for relating research activity to the policy context. In many countries, this framework has been developed against a background of relatively centralised decision-making structures, in which policy-relevant research was assumed to be of greatest interest to those working at the centre. It may now be necessary to extend the role of mediators of knowledge to ensure that they perform also for local decision-makers and practitioners too. It could be helpful for CERI to review the ways in which these entrepreneurs operate in various countries at various levels, as well as ways in which their role is developing.

iv) A strengthened *international dimension* to the knowledge base. There have long been some sectors of pure educational research whose findings travel relatively smoothly across international boundaries. Certainly many of the seminal works in the country with by far the greatest volume of research activity -- the United States -- are well known internationally. But recently, the international knowledge base has been strengthened, most notably by the production of international indicators of education through INES, IEA and IALS (International Adult Literacy Surveys). Whereas policy-makers in the past have drawn from international experience sporadically, in future they may have to do so more as a matter of routine. This development raises the question of how to strengthen regular channels for disseminating all forms of educational knowledge across international frontiers. The role of "Institutional International Mediators" of knowledge like CERI itself becomes interesting to evaluate in this context.

However, public education systems are not alone in wanting to become more effective through better use of knowledge. Companies, for example, are more interested than ever before in finding out what works in terms of production, mediation and use of knowledge. Moreover, both in the public and private sectors, there is a quest to ensure that the knowledge used is "state of the art".

Can education systems learn anything from these experiences?

-- As earlier CERI work on education-industry partnerships has shown, there are useful lessons to be transferred in both directions: educational organisations can learn from enterprises about what is effective, and vice versa.

-- Therefore, by looking at the application of knowledge about things other than education, it may be possible to reach a better understanding of the generic aspects of the cycle of knowledge production, mediation and use. In some areas of scientific advance, knowledge has raised productivity greatly. In most social fields, such progress does not seem so immediately obvious. Thus in health, for example, the invention and adoption of new drugs has undoubtedly saved many lives, but the organisation of medical services has not necessarily undergone parallel improvements over the years. Yet at a time when every government is seeking better value for money in public services, the use of knowledge to secure improvements is worth looking at. A recent study in the health sector looked at the "payback" from research and development, drawing on case studies on topics ranging from doctors and their careers to the costs and benefits of heart transplant programmes. ("Assessing Payback from Department of Health Research and Development: Preliminary Report", HERG Research Group Report No 19, Brunel University, UK, December 1994.)

The value of looking at other sectors would be to examine the mechanisms that seem most effective in making knowledge usable. To whom is knowledge of different kinds disseminated, and in what form? How can one ensure that knowledge users help set the agenda for knowledge-production, without undermining those essential long-term enquiries that have no immediate applications? In what way can practitioners be brought sufficiently close to knowledge production to ensure that they use knowledge appropriately? To what extent can a big new idea produce changes in practice? With respect to this last question, the environmental protection industry would be a useful example. The introduction of the concept of "sustainable development" has transformed the understanding of environmentalists' mission. Do the ways in which these changes have taken place contain useful lessons for educationalists?

PART TWO

CONTRIBUTIONS TO THE MAASTRICHT CONFERENCE

1. Information Needs of Governments

1.1 Problems and issues for governments in the interaction between users and producers of knowledge

by Claude Thélot, Director
Directorate for Evaluation and Prospective (DEP)
Ministry of Education, France

One reason why I am here with you today is no doubt the post I hold in the Ministry of National Education, Higher Education, Research and Entry into Employment in France. The point is that the unit I head is trying to build or establish bridges between the policy and research world. It was set up almost ten years ago with the precise aim -- one, I believe, that our conference shares -- of trying to feed policy into research and research into policy. I use the term "research" for brevity's sake. It would be more fitting, in my view, to talk on the one hand of a research, information and evaluation pole, in other words the knowledge base of the education system, and on the other hand of a policy or policy-making pole. My job in France is to encourage the utilisation of this knowledge base in policy-making and, vice versa, the fuelling of current policy issues into research and the knowledge base.

I will therefore endeavour to share some of my professional experience with you as a basis for discussion. As my speech comes at the start of this conference, I believe that the best approach at this early stage in our review is to take the policy angle. I will try to say what I think policy requires in terms of knowledge, research, information or evaluation in education.

Beforehand, I will make an important point, even if it is somewhat negative. We must not forget that the two areas, research or information on the one hand and policy on the other, are fundamentally heterogeneous. There should be no illusion about this. Not only are the processes not linear, as very clearly shown by the conference background documentation, but the two fields are actually heterogeneous. The two concepts, the two ways of reasoning, the two logics -- the research logic and policy logic -- are fundamentally heterogeneous.

The research logic has to be relatively independent from the policy logic. This extends from fundamental research through to the need for researchers and research teams to exercise independence in their work. This is central point which policy-makers must simply accept. The approach to research is to develop and explore different avenues independently of what might be wanted or needed at policy level, and policy-makers have to pay for this relative autonomy.

Policy-making, on the other hand, does not have the same legitimacy as science. Its legitimacy comes from the people and the election process in our democracies. And, consequently, policy-making is not, and should not be, a scientific process. It is fundamental to our work. I believe that the link between research, information and evaluation on the one hand and policy on the other is necessarily highly tenuous and highly flexible. I will return to this point in my conclusion. But it is precisely because this link can only be highly tenuous that it needs to be carefully preserved and reinforced. Policy-making cannot be based to any great extent on scientific data, but this is no reason not to supply scientific information, far from it. My experience tells me that there are four, albeit different, areas in which I consider that the Minister has a fairly large need for scientific input.

The provision of an information and evaluation system

The first area is roughly speaking the provision of an information and evaluation system designed to improve transparency. This is a new departure, at least in a country such as France: the idea that education systems have to be transparent is new. I think that for the Minister it is also a risky idea because to promote transparency is clearly to have to accept that the information truly reflects the state of the school and of educational policy and that it might well on occasion suggest something out of line with the Minister's wishes. A good information system is objective. I think that ministers in our countries have opted for transparency, which is a gamble but in my view less risky than opting for capacity. We have reached a point now in our democracies, with the century drawing to a close, when silence on education is no longer a credible political stance. It is better to speak about education, including the problems or even sometimes failures of our education systems, than to say nothing. When the current Minister for Education was in opposition, he said that I fed "his capacity for indignation" -- that was the expression he used when on the opposition benches. Now that he is the Minister he has taken over the idea that an information and evaluation system is essential today, despite the attendant risk, to give structure to the public debate on education systems as well as to steer the systems.

I believe that information on higher education is a key component of these systems and needs to be developed as the current standard of information is poor. In particular, if we want to place relations between central government and universities on a contractual footing, higher education, information and evaluation need to be of a far higher standard than is the case in our various countries.

Another priority is to develop information on the results of our education systems, good or bad. Obviously, the international dimension is central in this respect and it is appropriate for the OECD system of international indicators -- because the quality is good and improving all the time -- to have played a key role in the progress which we have made over the last five or ten years. I believe that the information and evaluation system needs to be very good on a general level, precisely to permit sound public debate, but also -- and in my view this is even more important -- an information and evaluation system needs to be built up at the level where we stand to win or lose most, namely where educational standards are good or bad: at school and classroom levels. We need an information and evaluation system that can supply information on each and every school, to give the users of the education system -- not customers -- a better picture of the service being provided.

In that sense, the steering of our systems is far more decentralised, since it is far more dependent on the end-users -- families, businesses, local authorities or even pupils. We therefore need to be able to supply information at the most detailed level, but we also must be able to pass on that information and evaluation to the actors themselves, particularly the teachers. This is what I call the "mirror effect": one of the best means of influence is to provide the main actors, namely teachers and head teachers, with information on the results which they, personally, achieve at a micro-educational level in their own classrooms and schools. So then, even without issuing any individual directives or circulars or implementing other forms of control, we can get the actors (teachers, head teachers, etc.) to alter their practices after having seen evidence of what they find difficult to assess themselves, merely by showing them the results that they have achieved or not achieved, namely the results of their past practices. In France, we assess every pupil in three different grades (about 700 000 pupils in each grade) at the beginning of each new school year. Obviously, this is not done to get an idea of the performance of French school children; if that were the case, only a sample of pupils would need to be assessed. The purpose of the assessment is to provide each teacher and each school head with

suitable information for ensuring that teaching and school management practices take account of pupil heterogeneity, thus enabling methods and results to be improved.

We can no longer conceive of improvements to our education systems as coming from the top down in the form of decrees or directives, or simply being imposed. Improvement will come solely from the bottom up, once the actors are given the necessary tools to effect the change themselves. Through this process we will clearly be able to develop information and evaluation systems capable of providing pertinent information at the local level. We need to be able to measure what might be termed a school's "value added". It is not a matter simply of researching and compiling a school's results. On the contrary, what needs to be emphasised is the value which the school adds, the progress it is responsible for, in other words the relationship between the achievements of the school and the context within which it is located. This approach is not very widespread in our countries and it would be worth developing it further. I believe that it is an area where major progress can be made in the next ten years. Clearly too, and this is my final point on this question, the supply of information at the micro-educational level, publicly, is vital. This is not to say that schools should compete with each other but everyone should be encouraged to reflect on the work of their colleagues in other schools and in other classrooms, thereby fostering the diffusion of innovation, an awareness of what colleagues are doing in other schools, colleges or classrooms in similar contexts. So the first point, in a nutshell, is to have a good information and diffusion system. Naturally, the word "good" should be clarified. I have just mentioned a few factors which I think define it, but this does not go far enough. There is clearly scope for lengthy discussion.

Diagnostic, causal and interpretative elements

To move on to the second area, I think that, in addition to information and description, and in addition even to evaluation or value added, the Minister would also want diagnostic, causal and interpretative elements. These words are not quite synonymous in French, and I believe that the same is true in English, but their meaning is clear from the Minister's standpoint. He needs a better understanding of reasons and factors, especially the factors at work in the educational system. What factors leave some room for manoeuvre? And, naturally, factors partly need to be identified from an interpretative analysis of the way our education systems work, of the way such or such type of results are achieved or not achieved, of the way in which methods and modes of operation combine to produce such or such result, meet such or such target. Once targets have been set, what is it that allows or prevents us from meeting them? Causal and interpretative analysis work is required, and here the Minister would like research to hierarchies causes and, beyond identifying structural causes, attempt to say something about factors and actors.

Educational research should go beyond long-term and structural effects and identify and highlight anything that emerges from the action of actors, and if it has not much significance, this should be stated explicitly. Research should also, establish a causal hierarchy, so that the Minister can consider not just the various factors and actors but above all the order of magnitude of their respective importance. In that sense, I think that a policy aimed at developing educational research should on the one hand encourage the cumulative side of that research, which is not very often taken into account and which also conflicts to some extent with the actual approach to research, and on the other hand encourage as far as possible the construction of data bases of areas where research has already been undertaken and results obtained. These data bases should help to put factors into perspective and to hierarchies them. I often say that research needs to be more sensitive to first-order reasoning. The Minister does not need an exhaustive description of mechanisms, but rather a snapshot of factors and causes assessed according to the order or magnitude of their importance. This

is central to the work: the only possible objective of any information system, or any interpretative study, is to supply orders of magnitude. And these orders of magnitude, particularly when they are first orders of magnitude, need to be more clearly revealed than educational research has done up until now, at least in my country and I believe in many other countries also.

A clearly important point at this stage in our review, which though I will not be addressing is important, is to identify and increase our ability to translate this research work into the actual practice of teachers and head teachers in the school and classroom. There are many reasons why things go wrong. For one, the dissemination of educational research and information is poor and inadequate. Moreover, I do not think that it should be the job of the researchers to do this themselves. I think that what we need are more intermediate bodies to disseminate the research, to reframe it in terms of teaching practice, in terms of the behaviour of actors and in short, to diffuse that research input throughout the education system, beyond even the Minister's requirements. Do the actors themselves have to be researchers? Do the teachers themselves have to be researchers? I would personally have some reservations about this, but the consequence of saying that researchers have to be researchers is that there needs to be some way of disseminating some of the research findings in the classroom. Teachers apparently read very little outside their subject. We need to find a way to make research into teaching performance more accessible to them.

Teachers and the knowledge base

Turning to the third key area for review, I will be brief because time is short. I believe that it is vital to develop our knowledge base of the main actors in the education system further than is now the case, starting with teachers. By knowledge base I mean not only objective information but also opinions and behaviour patterns as well as analysis and diagnosis of these opinions, behaviours and responses of teachers and head teachers. I do not think that the Minister should rely solely on the unions to provide feedback on what is happening in classrooms and on the position of teachers. The unions are doing this, of course, but they should not be the only ones. As for teachers and head teachers, including their state of mind, opinions and behaviour, we need objective knowledge of status and working conditions. We need an information system which is far more developed that it is now. In France, for instance, it is not precisely known what teachers earn, neither in secondary education nor still less in higher education. Hence the biased public debate. Moreover, if we want to ensure that we recruit enough teachers of the right calibre in a world where there are now many other career opportunities open to students leaving higher education than just teaching, the Minister and, more generally, the school need to be able to say objectively how the status of teachers in employment compares with that of other professions with the same type of entry qualifications. I therefore believe that the information system on teachers should be extensively developed and should also provide feedback for internal communication. Once again I would say that internal communication in the educational systems cannot be left solely to the unions.

Finally, I think that the last area or aspect, which is directly related to some of the ideas that I have already mentioned, is crucial. Research needs to be able to identify conditions and methods for introducing change into our education systems. I believe that the Minister, and more generally the education system itself, needs to have clearer knowledge of the conditions under which change can be introduced, conditions under which improvements can be made, conditions under which organisations like our education systems learn, progress, develop and improve. In education the success or failure of reforms -- if we can still use the word "reform" -- very often depends on the way they succeed, more on the way they are introduced, perceived and understood than on their content. In our education systems, the packaging, the procedures, the processes of change count for far more than the

relevance of the content. What we need is to know and better understand how to instil change, how to argue for improvement. But, above all, we need research into the sociology of organisations, a discipline that evaluates how an organisation learns, progresses, reacts to new situations, and not just any organisation, as most of the members are intellectuals. I feel that research could contribute a great deal in this area, not just for the Minister's requirements, but at the different decision-making levels within an education system.

To conclude briefly, I do not believe that the link in education between research, information and evaluation on the one hand and policy on the other is very strong. There are two different orders here. Information and research are in one specific order, as Pascal might have said, and education policy is in another and the links between the two orders are fairly tenuous and flexible. However, we cannot consider that the links should be non-existent. The links should be strengthened. There needs to be moderation in the intellectual position or approach to research and evaluation. Policy will never be driven solely by research, guided solely by science, or dependent solely on information or evaluation. This is not how it works, and indeed it should not be. However, I think that we need to ensure that when the Minister is reflecting on education policy and making decisions, the research findings, information on the system and evaluations of successes or failures should be more useful and more relevant, and in plenitude. The moderation in this intellectual approach to educational research and evaluation does not mean that we cannot strive to boost its current role and I think that this will be a challenge for us to face in the ten years to come.

1.2 New horizons for education: Strategic information to design a knowledge base for national policy-making

by Johan Heene, University of Ghent
Chairman, Flemish Education Council, Belgium

Exordium

"Within three years comparative statistics should be calculated, which reflect the actual situation of education in the European countries, to allow us to see which countries are progressing or staying behind, what are their weak points, which solutions should be transmitted from one country to another ..."

This plan to create an international educational indicator system was suggested by Marc Antoine Jullien in 1817.

Nil novum sub sole? The need for objective information to support the monitoring of education systems is not a new concept. It resurfaced at the beginning of this century in 1911 in the work by Taylor entitled *Scientific management*. It was the cornerstone of the Eight Year Study in the 1930s funded by the Carnegie Corporation. The OECD initially raised the question in 1973, but soon abandoned it. Are there good reasons to believe that the ongoing Indicators of Education Systems (INES) project is a final breakthrough? Did the Ministers of Education in OECD countries rightly and ultimately conclude that "information and data are preconditions for sound decision-making, and prerequisites of accountability and informed policy debate" (Paris, 1990)?

The legitimacy of gathering empirical evidence for the preparation of sound decision-making is not and has never been in doubt. What requires intensification is the study of possibilities and limitations, conceptual and technical modalities, political and societal conditions, and ways for efficient and effective implementation. The apparent international success of the INES project calls for a shift of focus. We could of course continue repeating basic questions (and answers) about the sense of fact-gathering, its monitoring potential, and the goals that can or cannot be reached for policy and public debate. But a more prospective exploration seems fitting.

A "because" needs to be added to the statement of the Ministers about the importance of information and data for sound policy-making. It should lead us then from possibilities for refining the indicator system to questions about its integration with other sources of relevant information, and its implementation in actual political problem-solving. To verify the relevance of this construction, we will test our more general statements against the problem of central versus local decision-making within the Flemish education system.

Educational policy-making

It is a truism to state that governments play a crucial role in managing modern society. Citizens in modern nations expect their governments to manage industry and economy efficiently and guarantee that social and cultural infrastructures serve welfare and well-being -- this includes an educational system which fosters self-realisation and prepares citizens for economic participation. To accomplish these and other tasks, today's governments face more complex situations than in the past,

such as rapid development in science and technology, overflowing information due to the dominant role of mass-media, increasing demand for accountability, and the internationalisation of economic, environmental and other problems.

Government attitudes vary according to their differing "cultures". Their power can function in a more hierarchical, "top-down" mode, or they can operate in a more pyramidal way, whereby authority is spread over more decision levels and advisory interventions play a more influential role. Though democratic inspired governing is better, it is also laborious. Governments can differ in the degree that they embody explicit values. They can see themselves (and/or be seen) as exponents of a single ideology, or merely function as public keepers of minimal moral standards.

The history of education governance is more crucial than for most of the other political domains. Education must prepare people for tomorrow. The education system must keep abreast of the growing complexity and rapid changes of society. Instead of limiting itself to the transfer of traditional and actual knowledge and values, a modern education system has to prepare youngsters for uncertainty. There is perhaps no political domain where the "culture" of governing becomes more visible than education. The history of (even recent) education shows how certain governments have tried to express a single ideology through the education system. The literature on educational innovation demonstrates clearly how radically pyramidal governing can change initial plans in their course to realisation.

Education policy can be analysed more specifically. Among others, Mitchell (1984) paradigms best illustrate its complexity by revealing a common aspect of educational policy making: the scarcity of financial means. Mitchell presents the four paradigms typifying the educational policy of a country. Functionalism and Interactionism aim to fairly distribute means (control of scarcity) in order to avoid or reduce conflicts. Structuralism and the Exchange model seek primarily to control conflicts, often due to a scarcity of means. One can also distinguish functionalism and structuralism which are characterised by strong public control, and interactionism and the exchange model which seek to support private actions. Some European countries oscillate between functionalism and interactionism, desperately seeking scarcity control and trying to settle deregulated legislation. In any case, it seems apparent that stronger public control somewhat simplifies the degree of difficulty facing a government.

De Leeuw has defined management as "planning with intention on the ground of insight". Among the variety of possible government positions, each in differing complex societal contexts, this definition calls for at least two characteristics of governing action. First, it would be (and has often been) disappointing to see educational policy limit itself to tactics (short or mid-term solutions), if these tactics are not part of a long-term strategy. This is true "intention". Second, De Leeuw assumes that sound management rests on insight. Insight is the capacity to find solutions by putting things in a proper, suitable, constructive perspective. Insight is, however, never "empty": "things" are nothing more in this respect than observations, knowledge, and data. The quality of insight depends on the availability of relevant information. It relies as well on an efficient and effective process of problem-solving. Instead of repeating the well-known "cycle of policy-making" (preparation, decision, implementation), it could be inspiring to view this process from another angle.

A genuine problem-solving process only starts when the "solvers" are willing and able to "problematise" the situation for their own purpose, even if the situation was already presented to them in the format of a problem from outside. Every possible solution to a problem stems from a (mental) anticipation as to its workability, value, and attainability. Solvers have their own pride. Every proposal for solution must be evaluated according to its actual quality. Needless to say that these

three moments can occur several times within one and the same process. Is there any reason to substitute this proposal to the respectable "cycle"? There is for me when I recall the numerous policy meetings where every attempt to clarify a problem was tackled prematurely by hasty solutions, and when every effort to anticipate creatively was rejected by destructive criticism. These processes (and solutions) would be more productive if the contribution of each of these moments were more explicitly respected.

For our purpose the model has the advantage in that it underlines the interactive importance of information for every (recurring) moment of the process. This information could be offered from outside in the format of education indicators. If this "because" is sufficient, let us turn to this issue.

Indicators: a knowledge base for governance?

In a recent, very interesting book *Making Education Count* (OECD, 1994), ten out of eighteen chapters provide a more or less explicit equivalent definition of education indicators. Indicators apparently have a bad reputation, since they have to be defended again and again. A reputable and rather early defender is Johnstone (1981), who simply referred to the Oxford Dictionary definition: an indicator is "that which points out or directs attention to something". Almost every defender seems to agree that an indicator should offer information about the state of the education system, without analysing or discussing "why". "They act as an early warning device that something may be going wrong, much as the instruments on the dashboard of a car alert drivers to a problem or reassure them that everything is functioning smoothly." (Nuttall, 1994, p. 79). This is rather impressive for the social sciences: agreement on basic principles.

Dissension usually begins when applying the definition to the practical level. Most authors would probably agree on about four out of the five specifications given by Johnstone:

- "... a much more general impression is conceived with more or less exactness. It (= an indicator) should be something giving a broad indication of the state of the situation being investigated";
- Indicators are built up on variables. "...an indicator would combine one of these variables with other conceptually related variables to form a general overview of the broad features of that aspect of the system";
- Indicators are tied down to time;
- Indicators offer basic material for theory construction.

Many scholars would not agree with just one of Johnstone's specifications: "A third feature of an indicator is that it is something which is quantifiable. It is not a statement describing the state of a system. Instead it must be a real number to be interpreted according to the rules governing its formation" (Johnstone, 1981, p. 4). Johnstone is perhaps overconfident about statistical precision. Statistics are nothing more (or less) than formal, solid, reasoned expressions of (related) data. What is the difference between student judgements about teaching quality expressed in verbal statements or on rating scales? A rephrasing of this third feature would read: Indicators should reflect as exactly as possible an aspect of the state of a system, in order to allow for a reliable interpretation of its actual quality.

The most essential feature in Johnstone's analysis is the distinction between variables and indicators. Governments have collected data on education for a long time, such as numbers of students, and amount of money invested in specific parts of the education system. It seems fair to say that there is a long tradition of periodical variable-collection. Indicators, on the contrary, are clustered variables. For example, numbers of students and money clustered together can lead to an indicator for "prime cost per student". Indicators are significant constructions on factual grounds. For the sake of political problem-solving, fact-gathering is overstepped by indicators in the level of knowledge-construction. This means that every indicator prefigures and anticipates problem-solving and decision-making to a higher degree than basic statistics. If the problem-solving potential of an indicator is high, the interaction between the research worker, information officer, and the actual decision maker becomes more equivalent. "What is measured is likely to become what matters." (Burstein *et al.*, 1992, p. 410).

In order to make this new relationship work for the benefit of better solutions, there is at least one condition of utmost importance to fulfil: the design base of every indicator should be as clear as possible, both technically and politically for every potential user (Bottani & Tuijnman, 1994, p. 26). Where policy-makers can be reproached for hasty, opportunist decisions, research workers seem to design sophisticated weapons to kill small mosquitoes. "We don't know that what we say is particularly significant, but it is at least true" (Merton in Halsey, 1961, p. 504). The reaction to criticisms, stating that at least methodology is served by this endeavour, cannot always take away the impression that methodological concentration acts as a substitute for the lack of societal insight and involvement.

It would be impossible to estimate how many indicators, significant bytes of knowledge, can be designed to disclose an education system. The OECD announcement that 49 international indicators are presented in the third edition of *Education at a Glance* suggests some pride about the rising disclosure rate, though still much more can be developed in the future. This situation calls for an encompassing framework, to report single indicators in a broader, politically significant perspective. Considering the possibility that reporting indicators can be relevant on different operational levels, towards audiences with different interests and expertise, one could strive for the design of an "information pyramid" (Bryk & Hermanson, 1994, p. 37). Even more care should be given to the conceptual design of the framework than to its structure. For the INES project, the OECD has developed what is called a pragmatic framework "so far", putting the indicators in three clusters: i) the demographic, economic and social contexts of education systems; ii) features of education systems; and iii) the outcomes of education" (Bottani & Tuijnman, 1994, p. 31). It is doubtful that pragmatic solutions will continue to satisfy, especially since recent theses indicate that the impact of research occurs less in praxis than in concept (Wagenaar *et al.* in Kallen *et al.*, 1982, p. 8).

As pragmatic as it may be, the OECD framework (input - context - output) suggests that an education system should viewed as a "productive organism". Though we cannot deny the tenability of this viewpoint, it is worthwhile to discuss its implications and to note other possible approaches (Bryk & Hermanson, 1994, pp. 38 & 42).

Whether it be the productive viewpoint or another, all agree that the INES project should develop valid comparable indicators while paying separate attention to the framework of problems. It is often too easily stated that "...no consensus is possible on more than a mere pragmatic framework...". My experience with school-level discussions with a descriptive non-dogmatic framework have strengthened my conviction that "no consensus" is often an a priori, aiming at true/false answers, rather than an a posteriori, limited modestly to tenability conclusions.

A specific "tenability" problem within the INES project, which would occur for whatever indicator system choosing an input/output model, relates to the difficulties in producing outcome indicators. The problem has to do primarily with technical and organisational matters; public authorities, with few exceptions, have only recently widened the scope of their data collection to student achievement. The problem is nevertheless not a mere technical one. Different goals of education within or between countries prevent agreement on what should be regarded as "good performance" (Bottani & Tuijnman, 1994, pp. 27-28).

It is again recommended to seek tenability rather than absolute answers. The IEA experience has demonstrated very clearly that even international research on student achievement can produce very useful evidence. The tenability viewpoint maintains that while there is broad consensus that assessment of educational achievement should not be reduced to performance in certain key subjects, it seems very difficult to agree on one which measures the more general aspects of achievement. There seems however to be a consensus that though general taxonomies of educational objectives are used throughout the world in differing national contexts, good performance does not depend simply on specific results of learning within subjects, but on the attainment of more general results such as problem-solving capacity, transfer competence, and intelligence (De Block & Heene, 1986). International agencies such as the IEA and national authorities should perhaps concentrate on designing broad acceptable achievement surveys.

Making things operative: policy-making in action

Elaborating an indicator system assumes that decision-makers will use the valuable information to improve the education system. Yet it remains very difficult to prove concretely that this assumption is valid. The reasons for this can partially be clarified by analysing the actual decision-making process.

It is again essential to recall that political decision-making does not strive for eternal truth, but for temporary tenable compromises. Working out such compromises functions according to processes often described in literature in more or less analogous terms. A striking common feature of many of these descriptions is their conception that these processes are exclusively or at least predominantly rationalistic, in direct contrast to the sharp and perhaps more realistic picture that authors as Weiss (1982) portray. Weiss begins with the observation that both popular and academic literature perceive decision-making as an event: a group of decision-makers assemble at particular times and places, review a problem (or opportunity), consider alternative courses, calculate advantages and disadvantages, weigh the alternatives against goals or preferences, and select an alternative which serves as a "decision". Even this description is less exact than many rationalist models in reputable textbooks.

Weiss goes on with a much more colourful description of undirected strategies which appear to dominate the political scene:

- Reliance on custom and implicit rules: officials do quietly what the agency has traditionally done. Even if a situation is unprecedented, officials try to interpret it according to customary procedures;

- Improvisation: confronted with an unanticipated situation, officials may exaggerate a point, combine a few tried-and-true procedures, or add a touch of novelty;

- Mutual adjustment: if one office has invoked convention or made improvisations, other offices can adjust their actions;

- Accretion: the first responses serves as precedent, and if they seem to work, they will be followed again;

- Negotiation: many policy conflicts are settled by direct negotiation among the involved partners. Threats and promises, discussion and debates, trade-offs of advantage and obligation are the currency of bargaining;

- Move and countermove: a typical mode of decisions in international relations;

- A window for solutions: unless a plausible solution is envisioned, the issue will not be identified as a problem;

- Indirection: some policy outcomes are unintended, but come about as a result of decisions made for other desired ends.

Undoubtedly "is" will oscillate somewhere between "should" and "could be". It is however important to keep in mind that decision-makers are genuine active problem solvers within their own operating context, wherein the activity of informal, self-defending networks is very intensive. Human testimony, it should be noted, is often a dominant factor in the interpretation of information. Research evidence may directly impact smaller problems, while bigger problems, which require more time and deliberation, are much more subject to all kinds of modulation by other factors than evidence.

What becomes of the wonderful indicator knowledge base in light of these facts? The message should clear. It is far from sufficient to calculate indicators, publish them, and wait passively for results (adopting the Research, Development & Dissemination model). It is highly important to observe and analyse actual implementation processes from a broader than rationalist angle, in order to seek improvement for the future. It is decisive in democratic societies to expand participation (and thus information of potential participants) in decision-making processes in order to maximise the solution-finding probability.

It is assuring to observe that the elaboration of intelligent policy-knowledge can have effects on policy-making:

-- arousing interest and debate;
-- influencing attitudes;
-- suggesting new thinking concepts and models; and
-- suggesting new rules and routines.

This allows for a certain awareness of the conditions which need to be fulfilled: distinctness of the message; design of dissemination and participation routes; existing of liaison points and efficient information channels; and preparation of the "recipients" (see Marklund, 1982, pp. 160-161).

Research, in whatever form, does not simplify decision-making but complexities it through in-depth analyses, by revealing contradictions, and by countering easy and opportunistic policy-making. Research can promote better quality of decision-making by indicating more fundamental routes in a long-term strategy. To do so educational research must shed:

-- determinism for probabilistic causality;
-- certainty for tenability;
-- illusions of completeness; and
-- illusions of necessary unity of concepts and methods (Suppes, 1982, p. 255).

Educational research, even the most sophisticated type, must earn its place in political decision-making.

Governing and being governed: the case of decentralisation

The relationship between governors and subjects being governed has always been as thorny in education as in all other domains of public policy. One of the factors which determines this relationship is the allocation of responsibilities and decision power to central, regional or local authorities. It relates to the government "culture", which was described earlier in terms of the hierarchical, "top-down" mode, as opposed to the pyramidal structure.

The present European situation can be characterised by regions, groups, and smaller entities claiming their right on self-determination, while supra-national structures (EC) seek their way to full power. Debates within countries on more central versus more decentralised decision-making quickly move abroad. It is important in this respect when the Secretary General of the Education Department refers to Michel Crozier (*Etat modeste, Etat moderne*) to support his plea for deregulation and local autonomy (Monard, 1991). It illustrates, as stated earlier, that my country, Flanders, is oscillating between functionalism and interactionism in Mitchell's paradigms.

Decentralisation of authority, regional and local autonomy, and many other analogous terms of contemporary discourse within the education system, offer an interesting case to test the relevance of an indicator system, to look for modalities for its proper use, and to warn against limitations.

Since the INES project has begun, Flanders has published two national reports, which comment on international indicators and include national data. In the first report (*De School op Rapport*) some indicators relate to the decentralisation problem. The level of decision-making as embedded in legislation differs slightly from the actual situation and deals only with non-public schools. Both indicators and the international comparison suggest that Flanders has a fairly decentralised decision-making system. Is the esteemed Secretary General wrong or at least exaggerating by his plea? Is the traditional pronouncement wrong when it states that the Belgian tradition resembles France's decentralised tradition more than that of local autonomy in countries such as the United Kingdom and the Netherlands?

Avoiding hasty conclusions

The first caveat pertains to the nature of the indicators and the way to calculate them. All three indicators express the amount of decisions, together for four decision domains: pedagogical organisation, planning, human resource management and financing. It would be more interesting to look at these domains separately. Moreover the indicators appear to be calculated after the presentation of a questionnaire to (only) nine experts in the field, three of each school type. As indicated earlier the way an indicator is designed should be explained before use.

The second is of a more fundamental nature and relates to political problem-solving matters. The Broadfoot (1985) analysis on educational policy in England and France is notably impressive.

She concludes that decentralisation does not necessarily lead to more local autonomy. The intensity of control varies independently of the locus of control. France's system is strongly centralised with weak control; England's is decentralised with strong control. The observation that both countries are becoming more alike refers more to centralisation than to "a new order of domination" (Weber): most industrialised countries, as expressed in the INES' indicator framework, tend towards central management models wherein the (less effective) process control (used traditionally in France) is substituted by control of products and outputs. Whilst this type of control is acceptable, Wielemans (1991) maintains that schools are pedagogical institutes and not mere economical plants that behave exclusively on the principle of consumer demands. Education authorities must assure that the collective cultural values are reflected in the school system -- strong central control, in areas such as minimal attainment targets, should ensure this. If not, the optimistic view of decentralisation as an instrument enhancing school quality may instead be considered "a bridge too far".

If projects such as the INES continue to offer better "knowledge bases" for educational policy-making, defining and operating "outcomes" will prove to be the crucial issue.

Concluding remarks

We have evaded the term "quality of education" as much as possible. "Quality" has become a catch-phrase in discourses on education but is only legitimate when the implications and above all the intentions are clear. It is disappointing to read reputed authors state casually that "quality is when an education system reaches its objectives". As if to say that objectives are always so clear that their attainment can be evaluated, or that the objectives themselves are not the most crucial object needed to discuss a system's quality. Quality is rather a conclusion of an appraisal process, whenever a (part of a) phenomenon is valued with certain criteria.

It must be obvious by now that we highly approve of continuous quality assessments of education systems, and that we consider indicators a valuable source of knowledge about these systems, as they provide intelligent information for high-level appraisal processes. Indicators must nevertheless fit into a broader framework in order to accomplish this task.

What is needed to qualify education is:

- a *mission statement* about its goals and objectives -- central authorities have to be the promoters of a continual public debate;
- *indicators* providing ample information on latest system developments necessary for high-level appraisals; and
- *criteria* which are tenable, accepted by the community, and proven to be valid for educational purposes.

Indicators are only a small vessel in the hostile ocean of educational quality. Still, a small vessel can be the only available means to reach the shore in good health.

BIBLIOGRAPHY

BOTTANI, N. and TUIJNMAN, A. (1994), "International Education Indicators: Framework, Development and Interpretation", in OECD (1994), pp. 21-35, Paris.

BROADFOOT, P. (1985), "Towards Conformity: Educational Control and the growth of Corporate Management in England and France", in Lauglo, J. and McLean, M. (eds.), *The Control of Education, International Perspective on the Centralization-Decentralization Debate*, pp. 105-118, Heinemann, London.

BRYK, A. and HERMANSON, K. (1994), "Observations on the Structure, Interpretation and Use of Education Indicator Systems", in OECD (1994), pp. 37-53.

BURSTEIN, L., OAKES, J. and GUITON, G. (1994), "Educational Indicators", in *Encyclopedia of Educational Research*, Vol. 2, pp. 409-418.

DE BLOCK, A. and HEENE, J. (1986), *Inleiding tot de Algemene Didactiek*, SWU, Antwerpen.

DE GROOF, J. *et al.* (1993), *De School op Rapport, Het Vlaams Onderwijs in Internationale Context*, Pelckmans, Kapellen.

DE GROOF, J. *et al.* (1995), *Het Vlaams Onderwijs in de Kijker: een Internationaal Perspectief*, Ministerie van de Vlaamse Gemeenschap, Departement Onderwijs, Brussels.

HALSEY, A.H., FLOUD, J. and ANDERSON, C.A. (eds.) (1969), *Education, Economy and Society*, New York.

JOHNSTONE, J.N. (1981), *Indicators of Education Systems*, Kogan Page and UNESCO, London and Paris.

JULLIEN, M.A. (1817), "Esquisse et vues préliminaires d'un ouvrage sur l'éducation comparée", Paris, as copied and commented by Fraser, S. (1964), Jullien's Plan for Comparative Education 1816-17, Teachers College, Columbia University, New York.

KALLEN, D.B.P., KOSSE, G.B., WAGENAAR, H.C., KLOPROGGE, J.J.J. and VORBECK, M. (1982), *Social Science Research and Public Policy-Making*, NFER-Nelson, Windsor.

MARKLUND, I. (1982), "The Impact of Policy-Oriented Educational R&D", in Kallen, D.B.P. *et al.*

MITCHELL, D.E. (1984), *Educational Policy Analysis: the State of the Art*, Education Administration Quarterly, No. 20, No. 3, pp. 129-160.

MONARD, G. (1991-92), *Enkele Opgaven voor een volgende Executieve, Pleidooi voor gemotiveerde en knappe leraren en een actieve maar bescheiden overheid. Tijdschrift voor Onderwijsrecht en Beleid*, Vol. 2, pp. 75-78.

NUTTALL, D. (1994), "Choosing Indicators", in OECD (1994), pp. 79-96.

OECD (1973), "A Framework for Educational Indicators to Guide Government Decisions", OECD/CERI, Paris.

OECD (1992), *High-Quality Education and Training for All*, Part 2, Paris.

OECD (1994), *Making Education Count, Developing and Using International Indicators*, Paris.

OECD (1995), *Education at a Glance, OECD Indicators*, Paris.

SUPPES, P. (1982), "On the Effectiveness of Educational Research", in Kallen *et al.* (1982), pp. 255-270.

WEISS, C.H. (1982), "Policy Research in the Context of Diffuse Decision-Making", in Kallen *et al.* (1982), pp. 288-305.

WIELEMANS, W. (1991-92), "Onderwijsbeleid en Lokale Autonomie", in *Tijdschrift voor Onderwijsrecht en Beleid*, Vol. 1, pp. 37-49.

1.3 New roles and responsibilities of governments in steering education and training: The case of higher education

by Roeland J. In't Veld
University of Utrecht, The Netherlands

Higher education is expanding throughout the entire world -- higher education understood as the aggregate of post-secondary educational activities in today's societies. It is penetrating more and more into the post-experience proportion of training activities. Many public institutions however find themselves in deep trouble. The reasons are manifold: the willingness of taxpayers to finance higher education adequately is fading, the flexibility of heavily regulated public universities is minimal, and prevailing internal conservatism is a major hindrance to opening new markets in an effective manner. Governments and institutions are caught in policy prisons -- financial systems dominate the debate on necessary changes. As a consequence the institutions react in a very defensive manner, and stagnation follows too often.

A number of macro-trends demand the development of a fierce strategy, both by governments and institutions. The partial commercialisation of knowledge has created a hybrid character of scientific institutions. The revolutionary importance of global conglomerates in communication technology puts major threats to the future independence of educational institutions, and life-long learning is beginning to influence all educational systems in a profound way. Educational policies however are still determined by the jaundiced paradigm of the human capital theory, although structural developments on the labour market have made this paradigm obsolete and harmful. A new policy theory is necessary. It is time to raze policy prisons and obsolete paradigms, and to begin utilising the strategic potential available.

Analysis of the state of the art

Educational steering is exercising influence in a thoughtful manner. Systems theory now includes a steering relationship between the environment, the steering centre and the system that is governed. Effective steering is exactly the main subject of theory formulation in public administration, also in education, but the perspective continuously changes. This paper argues that effectiveness should be considered a dynamic and flexible rather than static concept. Underlying theoretical concepts dealing with these properties are necessary, but only very partial and modest ones appear to be available.

Educational policies have been developed during the last century within an ideological framework characterised by "merit good motives". It was later supported by the human capital theory. The emancipation of all according to talent, not any longer dependent on heritage or purchasing power, has been a very socially-powerful policy objective. Education was and is the prime social process needed. As economic evolution has led to the era of knowledge-intensive productive processes, professional expertise has become the most important productive resource for a national economy. Social and economic arguments have gone hand-in-hand to promote the intense steering of educational systems by public authorities for a long time. The welfare-state concept consolidated this approach until the 1980s. Recently however the increasing scarcity of resources in the public domain has brought to the surface once more some of the "eternal" problems of educational public policies, such as "the emperor's clothes" character of the educational process itself (the vague concept of value

added by education), the visible ineffectiveness of selection through education, and the shortcomings of teachers and schools.

The increasing wealth of citizens and the realisation of the objective of emancipation have mobilised critical attention concerning the paternalistic aspects of recent educational public policies, at least in Western Europe. Why should the state fund education (i.e. taxpayers contribute much to higher education) if everyone can afford to pay individually?

Mass higher education in many countries is now accompanied by mass unemployment of university graduates. Once again the "positional good" character of higher education is arising. Public support for the increase of public subsidies to education is eroding in many countries. The overwhelming success of education in increasing the well-educated proportion of the population dramatically has eroded public support for the continuation of a high level of financial support -- a strange paradox. Public steering of education has not limited itself to financing. Educational laws have regulated the structure of the school system, the contents of curricula, the labour conditions of teachers, the exact procedures of selection and examinations, and the authority of local government in educational matters.

In many respects and in many countries the educational sector can be considered as an over-regulated system, where public policy-makers lack self-restraint in establishing rules. As a consequence the autonomy of schools and educators weakened considerably. The recent more general crisis of the welfare state has mobilised critical attention on the effectiveness of steering systems. New steering concepts have been developed in order to create a more limited role for the central level of public control and to improve the effectiveness of the educational sector itself by giving it more autonomy in a specific manner.

Steering systems

The 1970s were devoted to the improvement of strategic planning and budgeting, and the 1980s brought the predominance of output orientation, quality control and steering at a distance. It became clear then that the traditional type of steering by regulation was not effective any longer for a number of reasons: the general culture in society changed as well as the internal dynamics of the educational domain, and the calculating individual and the calculating institution appeared. In the framework of several concepts on "new public management", new ideas on steering emerged. Their common denominator was that the national central governance of higher education should step aside and concentrate on broad guidelines, be concerned with the performance and outputs of institutions, and utilise intelligent incentive systems as additional instruments for steering instead of regulation. Performance budgeting and indicators grew together with more intensive quality-control systems. Clear indications could then be shown on the increasing output per unit of inputs, which led to the popularity of this type of steering concept. There is no public sign that the increase of measured outputs is independent of the amount of resources, and that therefore the decreasing budgets are not followed by decreasing outputs.

A decade or so after the introduction of these types of concepts it seems worthwhile to evaluate the real consequences. Steering by incentives within allocation schemes or directed towards another tangible resource differs from steering by regulation because no norm is formulated explicitly, no central "command" is presented on desirable actions, but a reward or compensation is promised if a certain increase in (to the opinion of the governing body) desirable units of performance is reached. The imperative power of an incentive system has proven to be as great as that of a regulatory system.

However, the governing body can hide the norms and values underlying the steering behind the subtle characteristics of a budgeting system, or a related system like the student loans and grants system. Democratic control will be weak. The governing body does not account for those characteristics in public generally. For instance, if a government restricts the entitlements for student loans and grants to a certain number of years, it provides strong incentives for educational institutions to limit the length of studies accordingly. Or, if the government relates the continuation of student grants to a certain level of performance or success, it produces strong stimuli to adapt to those levels. Another type of stimuli is produced if the government for instance rewards the completion of PhDs within the calculating formula of block grants to universities, but not any other successful product of graduate education. It then provides a strong bias in the direction of a single type of graduate education. People and organisations have gradually collected the experience of finding themselves trapped by the incentive systems. The feeling of having being manipulated emerges and remains. The hidden hostility of incentive systems delivers a serious problem in some cases.

The second observation is that incentive structures are due to diminishing effectiveness. As a consequence of the learning capacities of the governed institutions and individuals concerned the perverse effects of the incentives gradually tend to dominate. Actors adapt and succeed in avoiding the unfavourable effects of the stimuli, and in immunising their actions. For instance, the incentive of rewarding research output in any form, either by counting publications or by measuring impact, for instance by the number of quotations, will lead to behavioural reactions. In other terms, the life cycle of these systems is limited. This means that it is necessary to build new information systems with new performance indicators from time to time. But investment in those new systems may prove to be too costly.

The modernisation of steering systems has been accompanied by a continuous decline of available resources per "unit" of production, both of graduates and the number of PhDs, in the vast majority of OECD countries. In statistics the visible increase of efficiency is overwhelming. What is overlooked is that critical thresholds may be passed quite easily. The pretension of an output-oriented budgeting system is that the available resources for each actor depend on effectiveness and efficiency. In the Netherlands such a system was in operation during the major part of the 1980s. The number of graduates and PhDs rose dramatically. The net result was that each actor had to face decreasing resources in absolute terms as well as in terms of resources per unit of production, because the total budget did not increase in accordance with total production, but it did decrease slightly. The "price" per unit of performance decreased sharply.

This trap became visible during the first half of the 1990s, and has led to the replacement of the system by less explicitly output-oriented systems in some cases. The main conclusion must be that "steering at a distance" produces a number of negative side-effects, but the main road of increasing university autonomy with the use of incentive structures has not yet been left behind.

Management group think

The above-mentioned concepts introduced a kind of management thinking in higher education. The role of management became much more explicit. The "integral manager" was introduced; programme and resource-management should be brought into one hand. Accountability and control became fashionable terms. The concepts were marketed in many instances under the name of decentralisation or at least deconcentration. In the area of higher education the motto was "increase the degree of university autonomy".

The net result is that university administrators have gained influence. Vice-Chancellors, rectors and deans, as well as directors of institutes, are more important now in Europe than a decade ago; the similarity with the already longer existing situation in the United States has developed. On the other hand, the individual university teacher and researcher have certainly lost part of their freedom. Individual autonomy has decreased. Standardisation or even bureaucratisation of teaching and research prevail. Some argue that in the field of scientific research this development will lead to increasing risk-avoidance, so that risk-bearing research will not be undertaken any longer. If this assumption proves correct, it might be a major disadvantage in the long run. Studies in other fields suggest that maybe the general practice of today's national authorities in order to cope with the professional elite is to discipline them gradually through the introduction of professional management combined with considerable decentralisation. Major progress is made in many countries in the area of quality care on teaching and research. The awareness that the methods used are subject to deterioration and the laws of diminishing effectiveness leads to periodical change and improvements.

Recent macro-trends in the Western world: driving forces for change

The interdependence of a number of macro-trends is very crucial to the situation in which higher education finds itself. The following driving forces should be distinguished: erosion of political motives to finance higher education with taxpayers money, the consequences of the partial commercialisation of knowledge, the threats and opportunities presented by the revolution of communication technology, and the impact of the gradual introduction of lifelong learning.

Erosion

Today it is now possible to envision the erosion of the, until recently so powerful, political motivation to subsidise the development of higher education systems into the era of mass provision of higher education. The characteristics of education, in particular the "positional good" (Fred Hirsch) character, have caused a declining willingness of tax payers to support higher education financially. One can observe the decline of the public provision of merit goods and a gradual re-privatisation in many advanced societies. The former considerations concerning distributive justice naturally are weakened in a rich society where everyone can borrow in order to invest in education with the perspective of future profit. The state will of course provide a safety net so that the disappointment of expectations as to the return on investment in higher education will not cause the financial breakdown of the individuals concerned. The possibilities of a student loan system under these conditions seem rather favourable.

Higher education is booming in so far that the demand for initial and post-initial higher education is still increasing, irrespective of the emergence of considerable unemployment among graduates. Within national systems where traditionally higher education is free of charge -- at times even guaranteed in the constitution -- this waning of political support will lead to considerable tensions, because it is impossible to increase student fees. On the other hand many government agencies are also heavily involved in the financial support of scientific research. There is no general crisis visible there, but strong tendencies prevail to support applied research. As a consequence relative negligence of fundamental -- and in particular from an economic point of view useless -- research could be observed. This type of research is produced in general, classical universities. The collective good character of fundamental research leads to the possibility of negligence, since it is feasible for no public actor to feel responsible.

In the internal organisation of national government two tendencies can be observed. In some cases, the Ministry of Education adds other assignments (such as "employment") to its original mission, while in other cases ministries for trade and industry, transport or health care fulfil tasks within the domains of science and/or research policy, or even interfere with general higher education. So the complexity of relationships between institutions and governments generally has increased. Multi-actor perspectives in strategies on behalf of institutions and their representative organisations therefore should predominate. Free-rider problems emerge in so far as both nationally and internationally the neglect of sufficient provision of means to fundamental research could remain unpunished.

Until now, governments based their strategies on an economic-utilitarian paradigm. But in fact the structure of the labour market has changed considerably as a consequence of the massification of higher education and technological revolutions. The filter function of higher education (see Arrow) has partially disappeared. Employers have organised their own selective thresholds, have created an outside ring of temporary jobs inside their sphere of influence. Long-term appointments for the fortunate few after careful selection are based upon observations and experiences collected during that period of temporary assignments.

The traditional concept of the "job" as stable or lifelong is also gradually becoming obsolete. Intermediate employer federations in their lobbying positions concerning education generally present very conservative viewpoints. But individual employers act quite differently. A process of labour-market flexibility must now be in view. On that market only temporary labour is traded; the suppliers of labour act like entrepreneurs. Of course this observation is only valid for a certain part of the total labour force, but it is increasing. Relative incomes on this labour market are changing more rapidly than in the past; the relative scarcity of certain professions may change, maybe not immediately, but at a rate so fast that present relative incomes become deficient as a basis for prognoses.

Lifelong learning by professionals in order to update their knowledge and skills fundamentally changes the position and scope of the first-tier initial programmes in higher education. Government agencies and professional organisations design sets of conditions for the continuity of professional practice, so that public regulation of professional practice and the realisation of lifelong learning go hand-in-hand (the Europeanisation of recognition of degrees and diplomas has many complicating features). Nation-states and professional organisations once more have become allies in order to maintain strong legitimate regulations, and guard the exclusive character of certain professions.

The traditional economic paradigm, based on some variant of the human capital theory, is now obsolete, and has become a hindrance to necessary change. International organisations such as the World Bank and the OECD are gatekeepers of this obsolete paradigm. Educational policies are still based upon labour market prognoses although all experts realise that the reflexive character of the labour market does not allow that type of forecasting. Relying on prognoses has become more or less fraudulous. The advice to future students to choose specific studies where the labour market perspective now seems favourable has a random character since in five years the picture may change dramatically. The time has come to rethink the general cultural meaning of higher education as a source for the redefinition of policy paradigms. The main characteristics of a new paradigm (or policy theory) should be based upon a careful analysis of major trends in the development of the labour-market structure, and the evolution of lifelong learning.

Communication technology

Not only the structure of the labour market but also professional practice itself is changing quickly. In the future, computers will be more reliable for continuously updating advanced databases than human beings. Human labour will be characterised by social interaction as well as men-machine-interaction of very high intensity where human faculties such as intuition and wisdom to deal with ambiguity, paradoxes, and dilemmas will be of great value. The future educational system will have to prepare for this.

The technological revolution in communication, publishing, broadcasting and computer technology should bring about far-reaching measures which will enrich the learning environments of students and researchers in universities (in Europe this process is proceeding far too slow in many disciplines). The presence of world-wide databases necessitates dramatic changes in teaching methodologies. The higher education system and its policy-makers should design a concept to cope with the powerful conglomerates which will dominate the high-tech communication industry (e.g. Negroponte). The Disney merger is not an incident, but has led to the formation of a powerful global conglomerate; in Europe one finds similar cases. It is not impossible that these conglomerates will start to interfere with universities. This industry will be and remain hungry for substance and would education not be an ideal future branch? Would it not be logical for conglomerates to buy educational suppliers? Financially a global conglomerate could afford to buy ten or twenty universities in Europe. And how could the necessary independence and integrity of science be maintained in such situations? So legislators face very old questions again: how to preserve the necessary independence of institutions for higher learning.

Commercialisation of knowledge

A further complicating factor is the gradual commercialisation of knowledge that causes a more hybrid culture of universities. This hybrid culture increases the probability of future conflicts between --regulating and incentive producing -- governments and higher education institutions. It is hard to answer causality questions. Have the recent budget cuts led to this process of commercialisation, or were the budget cuts made possible by the already strongly stimulated commercialisation process? Universities in Europe now have begun to earn a considerable part of their income through contracts. They operate on markets for applied research, consultancy and advanced post-initial education. Instead of pure collective sector organisations, they now develop into partially market-oriented institutions. On one hand they are accountable in a public sector perspective and framework, on the other hand they are subject to market forces. This duality causes major tensions inside European public universities: for instance the public authorities penetrate vertically in universities, through the presidency down to departments, and at last individual scientists, while the market penetrates horizontally.

The fringe benefits for individuals resulting from market transactions are in many cases more attractive than those allied to classical tasks. The reformulation of the Law of Gresham ("bad money drives out good money") may in certain cases read "market drives out task". A return to a past where market influences were absent is of course impossible because the declining public resources would not enable the university to survive. But governments tend to design barriers to a further increase of financial independence of institutions as a consequence of their market orientation, because they fear the disappearance of influence. For legislators this evolution is quite complicated. The relationships between the nation-state and a university are take shape in the realm of public law. Very often universities are legal personalities, and in some cases even faculties or departments possess

legal personality. But the contractual relationships between universities and third parties are framed by private law. The hybrid nature of universities confuses legislators who often react by denying the problem and stating that public law prevails.

Lifelong learning

Lifelong learning as a vital concept to refresh the knowledge and skills of all professionals on a regular basis has now entered professional life. Conditions for continuity of professional praxis in terms of teaching have been formulated and reinforced by public regulation. However the consequences of lifelong learning for initial education have not been considered thoroughly until now. If each youngster will be re-educated during professional practice, should then the curriculum of initial higher education not be reformulated dramatically? Should that curriculum not aim at competence instead of knowledge, at the learning of learning instead of learning, at meta-science instead of science, at the development of a harmonious personality instead of instrumental skills? Should subjects as philosophy of science, logic, epistemology and meta-technology not be very important? In this perspective it seems awkward that no major movement for the reformulation of initial higher learning is yet visible.

The global introduction of advanced communication technology will necessitate also dramatic changes in educational contents. Is the complex and rigid character of the existing educational legislation impeding this necessary adaptation to important societal driving forces? These driving forces will inevitably play a major role in future legislative praxis on education in the Western hemisphere. It is still unclear if they will be less important in Eastern Europe. Crisis management therefore is inevitable.

Policy traditions in higher education

It is not only the obsolete human capital theory which causes trouble and stagnation in the necessary change of educational policies. Even if the need for a new cultural paradigm would be satisfied, a mixture of the four traditions of higher educational policies which are visible in the Western hemisphere would still remain. They are Napoleonic, the Humboldian, the American and the Newmanian tradition.

The Napoleonic tradition fits into the broader centralistic tradition of the nation-state France. Here universities have created extreme dependence on the state. Main decisions on the affairs of an individual university are all made at the national level, even if it concerns appointments of functionaries and professors. The individual university has hardly any autonomy at all. Of course these universities all have a public character. The curricula are defined on the level of the national government. The main task of these universities is teaching. The most important research is performed in separate institutes outside the universities. Student access to studies in general is free, and is based on the diploma received after the secondary school exam. The student fee is low. The drop-out rate is considerable. In many respects this university is the opposite of its beautiful sister in French higher education, the *Grandes Ecoles*. Here the entrance exam is very serious, and the drop-out rate afterwards is close to zero. University buildings are a matter of national concern. And naturally the internal organisational structure of the universities is described in great detail in national legislation. National committees decide on appointments of professors, and university leaders are appointed by the government. The financial regime resembles that of ministries. The discretion of the university itself is minimal. The principal steering instrument is regulation. Inputs and

throughputs traditionally are the main steering subjects. The regime is very centralised and the standardisation of all official aspects of university life is considerable. As a consequence of the international position of France this tradition has spread over a number of countries.

The second archetype refers to the Humboldian tradition, which developed roughly during the same period as the Napoleonic. It points to a university with its back to the rest of the world as far as its primary processes are concerned. The research it performs is aimed at pure science, the accumulation of knowledge, absolutely independent from any specific outside societal interest. The core expression here is *Interessenlosigkeit*, the absence of any outside interest. This type of a university is similar to a cloister. The teaching is a derivative of research, and it is characterised by the freedom to teach and the freedom to learn, by *Lehr und Lernfreiheit*. The learning process is aimed at the adaptation of an academic, research-oriented attitude. The unity of teaching and research is continuously stressed. The curricula are designed inside the universities, and not decided upon by any external authority. The decisions on the presidency and on professorships are also made inside the university, although a regional authority may have the right to formal appointment. Education is free of charge. Access may be open but can also be hampered by a *numerus clausus* or a *numerus fixus*. This notion of a research university has had an enormously strong dissemination; it can be recognised in some shape all over Europe and also on other continents.

Not to suggest that it is possible to find a basic model in a higher education system characterised by diversity as that in the United States, but one may observe a specific characteristic of a considerable number of American universities which is quite different from the Napoleonic and Humboldian orientations, and which has influenced a number of European policy-makers and European universities in the second half of the 20th century. This characteristic is defined by the understanding that a university exists in order to render services to society. The external orientation towards society at large can be considered its prime reason for existence. In many ways this type of university is the opposite of the Humboldian category, at least in so far as its relation to its environment is concerned. It is characterised by openness. Both primary processes, teaching and research, are to be justified on whether the activity serves the broader common interest of the entire society. This orientation enables the university to operate both in a public and a private environment; it may combine a rather successful mix of task and market-oriented processes. It will continuously redefine its mission and its core activities in response to societal change, but not in a mechanistic way. It is directed towards the world, but its own set of values is worshipped, and held in great esteem. The process of responding to outside impulses is reflexive.

The Newman concept -- named after Cardinal Newman -- concerns an aspect of the British university, which is less visible elsewhere. The central objective student presence is only partially formulated, if one restricts it to the teaching of knowledge and skills. The preparation of the student for later life, the balanced development of a student's personality may be as important. Therefore the university does not only consist of faculties, but also of colleges, and not seldom the most influential teacher is not the professor, but the tutor. It is not without reason, that the continental method of standardising degrees in Oxford and Cambridge was until recently absent. Students were prepared for their future position in the elite of the Empire. The reproduction of societal values of course appeared to be a very important part of this type of education.

In many European regions two or more of these archetypes have in different periods influenced university life as well as legislation on higher education. In most European countries one finds a mixture of at least two or three of those traditions with differing relative weights. Of course the strong introduction of a market-oriented approach in a Humboldian environment will cause much more trouble than the same development in an American tradition.

Positive future strategies

The structural positive strategy beyond crisis management to be designed by governments should be the following:

- Prepare an escape from the "policy prison" by loosening or even disconnecting the ties between the different components of higher education policies; in particular the gradual financial privatisation of higher education should not be retarded; and roughing out the impact of government policies by consistent decentralisation;

- It is no longer necessary in advanced societies for governmental subsidies to finance the main burden of higher education. Global voucher systems can enable all young people or specific target groups to invest in their future education. Loan systems with sufficient safety nets, such as governmental guarantees on repayment, can take care of financial issues;

- Further the fundamental reformulation of the curricula in initial education in the framework of life-long learning;

- The Newman concept of higher education has much future vitality. The driving forces demand much attention for personality development during initial education. It should be seen whether this concept can be combined or even amalgamated with the American one;

- Ensure patterns of co-operation within the higher education system in order for them to meet the high-tech-conglomerates and maintain an independent position. In particular, the threat from the media-conglomerates demands this type of co-operation and immunisation;

- Improve the transparency of the markets for post-experience education, and further quality care;

- Avoid the danger of new detailed regulatory patterns in the domains of conditions of continuity of professional practice;

- Adapt to the already visible structural changes on the labour market and build sensitive antennae to follow the future evolution of that market;

- It is no longer rational to base advice on the choice of studies to future students either on the present circumstances of the labour market, or on naive prognoses. New paradigms are needed, referring above all to the cultural meaning of higher education. This does not imply that it is necessary to refrain from accurate relationships between higher education and the labour market;

- Allow hybrid organisations with stable value patterns to develop.

The gradual commercialisation of knowledge, the privatisation and expansion of post-initial education, and the increase in contract-research all demand consistent internal university organisation. It should be characterised by a number of properties of the American policy tradition. Government policies should accommodate this necessary hybridisation of the university.

2. Elements of the Knowledge Bases

2.1 Education research and US federal educational policy

by Barry White, Executive Office of the President
U.S. Office of Management and Budget
United States

Introduction

Virtually all Federal education policies, and for that matter policies in most other arenas, are justified publicly by reference to research of some sort. An idea may occasionally be said to spring full blown from some policy maker's head, but it is certainly preceded by some information input of some kind, and when made public it is always justified by some set of analytical findings. Reference to "research" findings provides respectability and legitimacy in our political process, regardless of the quality or relevance of the research cited.

So the goal for those of us in the policy advice business is not just to bring research per se to the policy-making table; there is already a place reserved for it. Our goal is to bring to bear the best quality, most relevant research , on a timely basis, in a manner that makes the findings understandable by policy makers. We bear the responsibility for "narrowing the bounds of ignorance" within which policy makers normally operate. This is far more easily said than done.

We cannot, of course, ever expect that research will be the only input to policy, nor do we judge the effectiveness of our participation in the policy process by the frequency with which our informed positions become the final policy. But if we succeed in meeting each element of this goal, then whatever the final decision -- whether or not if follows the explicit or implied direction of the research findings -- we have fulfilled our basic responsibility.

Therefore, my thesis for this discussion can be simply stated:

> High quality, timely, well-presented education research can have a significant influence on the outcome of Federal policy, but only if the political opportunity or opening is present to permit such influence. Without the opening, the research, however powerful as a matter of science, will not likely have a major influence.

Since most of us here work in political environments, I doubt this thesis is especially startling, but I would like to pursue it a little further in the specific U.S. context, offer some examples of different ways research has influenced policy, and suggest the conditions that might produce a closer relationship between research and policy.

I should stress that I am speaking as a budget examiner and policy adviser; not as a researcher, but as a user of research findings. These findings reach me through a variety of direct and circuitous routes. I can almost never be completely sure that the research I know of is the best or most appropriate for the issue at hand. But neither can I let that uncertainty get in the way of forming judgements and providing advice when advice is called for. The closing thoughts below also address the unsystematic paths research takes into the policy arena.

The US federal education context

Our national government is sharply constrained by law and still more by custom, in the degree to which it can directly affect the quality and content of public education.

- The U.S. government does not dictate K-12 school curriculum, teaching methods, teacher qualifications, educational achievement goals, testing devices or test content, or performance standards for student progression through levels of schooling. All these authorities and more are reserved to the individual States, local governments or State or locally elected school boards. Federal authority is even further limited at the postsecondary level, where custom even more powerfully operates against Federal "intrusion".

- The U.S. government does have significant direct effects on public schools, but on other dimensions. Federal law, for example, prohibits certain forms o discrimination in educational opportunity, such as on the basis of race, religion, gender or physical or mental disability. These things the Federal government can direct are extremely important, and often require enormous expenditures by States and schools that they would otherwise not make, but by and large, these things do not address the quality and content of educational achievement for the majority of students.

- The Federal government does, of course, have a legitimate concern for the quality of education and resulting skills of the workforce, so it does seek to have impact on quality and content. It does so in two primary ways:

  -- by leadership actions (calling public attention to problems to bring pressure to bear on those who have direct influence; showcasing possible solutions, financing reform work of other); and

  -- offering money incentives to influence State and local behaviour.

  These are very indirect, very time consuming, very imprecise and uneven ways to address so significant an issue as the educational quality of a nation, but that is the way we do it. To do otherwise would challenge our constitutional structure and traditions. Arguably, we have moved, or were recently moving, toward taking up that challenge forthrightly, but the political environment since our last Congressional election makes it unlikely we will do so very aggressively in the near term.

- The money the Federal government does provide represents a relatively small fraction of total Federal, State and local K-12 expenditure, rarely much more than 5 to 10 percent in recent decades. The absolute amount is not an insignificant investment, by one count some $ 34 billion in 1994, and could be enough to make a major difference in State and school actions on the quality and content dimensions, if the conditions for its receipt were so defined. But they are not.

- Finally, because the primary responsibility for education is not Federal, the Federal government did not, until recently, attempt to change the core educational enterprise directly with its funding. For that purpose, we primarily use the indirect leadership methods, such as providing research information and models for others to follow if they wish. We concentrate our money incentives instead on working to get States to provide

equality of educational opportunity for the lowest income individuals, those generally not in the mainstream. This is a critical task but not one that necessarily influenced the quality of education overall. I'll come back to this point in a moment when looking at the systemic education reform strategies of the current and previous Administrations.

Thus, a different US speaker, a State school superintendent perhaps, could take today's topic into discussions of the ways research on how children learn affects teaching methods or teacher qualifications policy in his State. My examples have to deal with Federal policy actions in quite different realms.

Examples of research use in policy decision

Here are three examples of different ways in which research has influenced policy. In each example, it will be clear that research had a role to play, and was necessary to the decision-making process, but in no case could the research by itself have forced a decision or necessarily predicted the final decision made.

Example 1: Accumulated research evidence can lead to a major redirection in basic policy, when the political conditions are right.

The Elementary and Secondary Education Act of 1965 authorises programmes spending over $ 10 billion per year in recent times, mainly to influence schools to provide better educational services to low achievers, who are disproportionately from low income families. Questions about the real impact of the programmes on educational achievement were raised almost from their beginning. Periodically, changes were made to respond to them, but always continuing the premise that special, remedial instruction, primarily in basic skills was the essential ingredient to success for these children.

A growing body of research evidence indicated by the 1980s that lasting improvements were not being achieved by participants; there was something more fundamentally wrong in the programme structure or educational process. These programmes had generally enjoyed fairly strong bi-partisan political support which ensured steady funding growth regardless of research findings. Evidence of inadequate impact led to actions to change the programme, not eliminate it or cut it back.

There then occurred in 1993 and 1994 a window of opportunity for fundamental redirection of the programme plus expanded funding. This extraordinary opportunity arose from the confluence of a) convincing research findings indicating the direction policy should take; b) fairly well worked through theories of how to translate the findings into practical school reforms; c) a majority in Congress and most of the minority sympathetic to reform; and d) a President as committed as his predecessor to education reform, but differing from him in that he supported enacting support for these reforms directly into Federal law and providing substantial new funding for them.

The result was the Improving America's Schools Act and the Goals 2000 Educate America Act. These replacements for the prior programmes are base don the principle of high academic standards for all children, and the major components of schooling -- curriculum, teaching methods, teacher training, assessment and feedback -- all deliberately organised to help all students achieve them. Research had indicated that low expectations can lead to low performance, that change in one key component did not automatically lead to consistent changes in the others, and that only changes in all together could give hope of major improvements in education achievement. The research also clearly indicated that the greatest need for improvement was in low-income areas, so within the

overall strategy for improvement, special emphasis was placed on resources and change in low income areas.

This is one of our great success stories for the alignment of research and policy. But those laws could probably not have been passed in the political environment preceding 1993, and it is certain they would not be passed in their current form today. The research was no different before 1993 and has not changed since enactment. What changed is the political context.

Note that the previous Administration supported much the same set of research-based reforms. But there was a further policy at stake. That Administration believed that reform had to come from each community and State, with strong outside influences -- business, State governors, community groups -- helping (some might say forcing) the education community to accept and implement change. The Administration thus favoured a Federal role expressed through leadership activities and development of new models of schooling: encouraging comprehensive plans; giving each school district enough Federal money to launch one or more "break the mold" total school redesigns; demonstrating with Federal funds the potential benefits of permitting low-income parents to choose private over public schools. That Administration could not accept the Federal government guiding and "approving" State and local reform plans, as the new laws provide.

Nothing in the research gave completely convincing guidance on which Federal role strategy to achieve reforms would be most effective. this central decision for Federal policy turned instead on the personal and political values and convictions of policy-makes.

Example 2: Clear research findings can lead to totally opposite policy conclusions at different points in time.

In the mid-1970s, we examined what would happen if we gave money incentives -- tax credits for a portion of wages paid -- to private industry to hire low-income, generally poorly educated persons. In those days we had less confidence I the likelihood of school improvement, and in any case, we wanted to find something that might improve the employability of the unemployed who had already left school. Perhaps steady work and training on the job would be the key to future labour market stability, if only employers would hire these people. A short-term research project was initiated.

The research revealed two key findings: a) there would indeed be a certain amount of new employment generated for these populations; but b) the majority of the funds (tax credits) would be given on behalf of people who would have been hired in any case.

The policy decision based o this analysis was that the size of the "windfall profit" to firms was too great to justify the overall expense. A few months later, in a different administration, the same problem was debated and the same analysis presented. This time the policy decision was to provide such incentives. The second Administration believed that the windfall profit was an acceptable cost of obtaining whatever amount of new employment might be generated. Research both times clearly identified costs and benefits. The final decision turned on the subjective valuation of those costs and benefits.

Twenty years later, we are still arguing over this policy (now law). The evidence based on actual practice is about the same, though more explicit that windfall profits are the norm. Now, however, we have firms enjoying this benefit who do not want to let it go. They are not moved by research findings suggesting the government might be wasting money.

Example 3: Good research can lead to the opposite result its funders envisioned -- which if the funder operates the programme at issue, can make the funder cautious about funding research the next time.

It is not uncommon for Federal agency research directors to shy away from launching systematic evaluations of high profile, politically sensitive programmes. The results may demonstrate that the programme is not succeeding, and they fear giving such "bad news" to their leaders. They also fear that negative results will hurt programme funding. In my first example today, the research was conducted despite these concerns, and negative results did not lead to reduced funding. Here's an example that came out another way.

Since the mid-1960s, the U.S. has spent billions annually on skill training and related services for low income unemployed persons. A recurring, obvious, question has been: do the programmes make a significant difference on the key dimensions of net improvement in earnings and employment. A major, multi-year longitudinal study was completed a year ago that provided findings which generally confirmed modest benefits for most adults. But it also revealed little benefit and often negative results for a key population, teenage males.

When the data became public, the funding agency announced a new, five-year plan of studies and analyses to try to improve the programmes (the big research study had, oddly, not been funded to examine the reasons for the results it found). In the President's 1996 budget, however, these negative findings for youth were the basis for a significantly lower budget request. Then Congress cited the findings as it cut the programmes much further back and will likely continue on that path this Fall.

Some in the agency believe this is the fulfilment of the old saying, "No good deed goes unpunished". They did the research everyone asked them to do, and now their money is going away. We hope this will not make the agency less prone to fund such research in the future, but we can't be sure.

Lessons learned

These examples illustrate a few of the ways research in which the policy process uses, misuses, or ignores research. Changes in the way the research was done, the quality of research, or the presentation of research would not necessarily have made any of the outcomes any different. A few changes in the process of bringing research into play might, however, improve the general interaction between research and policy.

Objectivity

Ideally, research produces objective findings, and those findings are kept quite separate from the researcher's expression of policy inferences to be drawn from the research. In the U.S., we do not have a set of research institutions which are by consensus deemed objective by all interests. Most institutions doing research (university or private), and by extension, most researchers, are deemed by one group or another to be advocates of a particular way of thinking. We tend for example, to refer to "liberal" or "conservative" think tanks routinely, as if the thought process itself were liberal or conservative, rather than the uses to which the thinking is put.

Occasionally, political leaders are actually actively hostile to education research, believing it to be so heavily biased in one or another pre-set direction as to be completely without objective value. This accusation has been made against Federally-funded education research with equal bitterness and intensity (albeit with few concrete examples) from conservative and liberal critics alternately, over the last two decades. What they are really may be saying is that certain research is used to support policies they do not agree with. But they state this point as a criticism of the research itself.

Of great concern for the future of knowledge development, our current Congress, perhaps as part of the majority's general mistrust of the Administration, began a process this year of cutting down or eliminating funding for education and training R&D.

It is conceivable that if the sources of research were deemed objective by all points along the political spectrum, that research would have a more powerful impact on policy.

Many of us in government have speculated o how a neutral coalition of funding sources might be assembled to become the source for truly independent, high quality studies. The catch is that if a government agency did try to be the catalyst for organising such an entity, some observers would immediately suspect the entity's independence. At any rate, we have not tried to do this in the education field. Perhaps we should, and possibly doing it with some international participation would help raise it out of the partisan conflict.

Educating policy-makers

In the OECD report on educational R&D (OECD, 1995), there are observations on the difficulty of maintaining continuity along the researchers doing important long term studies. This problem of transience is even more pronounced for policy-makers. Their tenure is relatively short, just a year or two usually. The political attitudes they bring can differ sharply from one administration to the next, which in the U.S. can mean in just four years.

Researchers rarely become top policy-makers; policy-makers are rarely inclined to do or to read original research. Policy officials rely on staff to filter information and to bring them judgements about its quality and applicability. Policy officers rarely ask for bibliographies or footnotes or citations. They assume that our advice is informed and not totally subjective. They really do not have much choice but to act this way.

Unfortunately, people like me are generally no more likely to be research experts than are the political officials we advise. My own programme responsibilities span workplace policy, welfare, child nutrition, social security, and other fields in addition to education. Even if one of my staff, on whom I rely for information on findings from research, comes into her position as a subject matter expert, she will rapidly fall behind the field as the press of day-to-day business takes over her time.

In the Office of Management and Budget, we put great stress on our people's duty to keep up with the field, and try to set aside time for their attendance at research conferences and for other ways of learning the state of the art without reading every study. The process is all fairly ad hoc, even haphazard. But compared to policy officials, we are model repositories of learning.

In over 20 years in OMB, I have yet to solve the dilemma of how to balance short term demands on our time with the time needed to maintain the knowledge base, without which our policy advice will be less valid.

At minimum, we work to maintain funding support for the research enterprise in the agencies across Administrations; we encourage (sometimes force) multi-year data collections we know will be needed to influence future policy, even when current policy-makers and the programme agency are uninterested in the subject; and we place a high premium on our capacity to bring the best research information to bear on the political decision-making process. None of these tasks is easily accomplished and none are consistently done very well, but certainly no worse in the education field than any other.

Working toward research consensus

One of the most important limiting realties of high stakes social science research -- that is, research to be taken into account when major public policy decisions are being made -- is that there is rarely unanimity among researchers. The policy adviser and still more so the policy official is compelled virtually in all cases, to apply some degree of independent judgement about which research finding he will place his faith in. He may do so on the basis of his own technical knowledge, if he has any, but more often it is on the basis of his personal or political views, and sometimes even on the basis of his personal opinion of one researcher vs. another.

In the OECD report on educational R&D, there is a wonderful line about researchers that captures neatly the frustrations policy-makers feel and constantly voice about research: "Researchers in principle do not want to call for closure on any issue of importance. They will regard the truth as contestable and provisional and in need of reiterative testing and replacement".

Somehow, making the achievement of consensus on main points a more highly valued goal of researchers seems important. Policy-makers have no time to sort out cacophonous research claims. It should not be too much to ask of a research enterprise that wants to have influence that it find some way to discipline is output in this way, without in any way shutting off proper questioning of prevailing wisdom. Such discipline implies standards of quality that are broadly accepted and somehow enforced among peers. We may not be at that stage yet in education research, but if we were, its findings could be more influential.

Conclusion

It does seem increasingly important, that high quality education research be actively supported and intelligently used in the policy process.

We used to take the quality of education for granted in our country. We assumed that our schools were doing the best possible job in producing people with the skills and understandings necessary to function effectively in our society and economy. Our confidence has been badly shaken in the last 15 years, mainly by the cumulative impact of research evidence to the contrary.

Though our political climate right now is very combative, and will grow more so as our next Presidential election comes closer, there is a broad consensus on the need for educational improvement. It is possible that stronger research, well-presented, and subscribed to by a wide array of experts, could help direct us toward the best ways in which to achieve that improvement. If and when such research emerges, I take some comfort in the recognition that our policy development institutions are ready to make use of it.

2.2 Contributions of educational R&D: The case of the Netherlands

by Leon Henkens, Director-General
Ministry of Education, Culture and Research
The Netherlands

Introduction

During the first conference for the OECD project on educational R&D in 1992 in Washington DC, the Dutch representatives were asked whether the Netherlands would be interested in organising a conference to discuss their system. This proposal was based on the international orientation of Dutch scientists and the Dutch educational system's interesting mixture of the continental German pedagogical orientation, the American/Anglo-Saxon empirical tradition and the Scandinavian/Swedish approach on national educational innovations.

I wish to present here some of the important issues faced by the Dutch educational system and treat certain problems raised by the new orientation in research policy in which the national science council is a main agent in research on education.

Educational support structure

Until now educational research concerning the school sector (primary and secondary education) has been embedded in a support structure for education regulated by a separate Act.

The support structure consists of 65 school counselling services mainly supporting primary schools. There are three national advisory centres, in the Dutch tradition: a catholic, a christian and a public centre. They mainly support secondary schools and teacher-training colleges, but also have important tasks in implementing educational policies.

The "D" of educational R&D is mainly located in two big national centres, the CITO (National Institute for Educational Measurement) for educational testing and the SLO (National Institute for Curriculum Development) for the development of curricula. Finally a national institute, the SVO (Institute for Educational Research in the Netherlands) is responsible for the programming and funding of educational research. One idea behind the design of the support structure was the configuration of a Research, Development and Dissemination cycle (R,D&D), where the SVO was the first link in this cycle to produce new scientific insights.

What in fact happened was a more independent functioning of the institutions, for instance it appears that the relationship between research and development is not very strong. It takes too many institutional steps to translate scientific findings into educational practice.

The Freudenthal Institute for Mathematics is one example of an institution where the R,D&D is integrated into the programme. The Institute is part of a network of teachers, teacher trainers, and counsellors. Its international scientific influence, relevance for educational practice and knowledge export prove the Institute successful. Recent political decisions were taken on the future of the support structure. The central principle was to strengthen the position of the demand side. The money for school-counselling services will be transferred towards the municipalities, in a measure to

strengthen local educational policy. Part of the money for national advisory centres will be transferred to secondary schools, so they may acquire their own support services.

Available sources for educational R&D

Most research capacity is located at universities where the staff spends 40 per cent of their time on research, or in total 30 million guilders. The national organisation for educational research, the SVO, distributes 20 million guilders, which as a result of earlier decisions will become 15 million guilders. The SVO works for the school sector.

Other parts of the educational system have their own research budgets which are mostly commissioned by the ministry. An expensive but important project is the periodical monitoring of the quality of primary education, as shown by testing results. This quality assessment enables us to answer the question as to whether the learning effects of education improve or deteriorate over time. Recent results show a small improvement on mathematics compared to 5 years ago.

Part of the work of educational support institutions can be considered scientific development, which is estimated in total at 26 millions guilders.

Characteristics of Dutch educational R&D

In terms of volume, with particular reference to the R&D indicator in the OECD *Education at a Glance (1995)*, the position is relatively high. The degree of institutionalisation is very high, both for development and research. Most of the research is carried out by approximately ten institutes. They are situated within universities. In general there is a high degree of compartmentalisation, although there are co-ordinating devices within the ministry. The overview of the budgets presented indicates that almost each sector and within the ministry several policy divisions have their own research budgets. Scientific development is separately organised. Educational institutions in higher education have their own budgets.

The degree of market orientation is positioned in the middle which is only the result of two extremes. University research and development do not function by market mechanisms and by competition for budgets, though commissioned research does.

Some 20 years ago educational science in universities developed out of several social sciences and is now considered multi-disciplinary. The international character of scientific products is fairly high; almost all the empirical research is national.

Research orientation in the past was strongly biased towards policy but now leans more towards a scientific direction. One explanation is the emergence of more solid university organisation where research schools are established. There is one research school for educational science in which all the faculties for educational science participate. The decentralisation of policy to municipalities can lead to more practice-oriented research. The future direction of educational science will necessarily be influenced by studies on future developments in educational research and on knowledge gaps as defined by several parties.

Another important dimension not yet mentioned is the quality of research. It is not certain where Dutch researchers are positioned compared to their colleagues in other countries. Very recently

an international visiting committee surveyed the quality of educational research in Dutch universities and judged the overall quality satisfactory.

Returning to research policy, I would like to resume with a case of research policy-making. I generally presume that in other countries comparable questions are posed concerning the necessity of separate and independent organisation for commissioning educational research, the relation to the national science policy and the question of how to involve the research user in the research process.

Last year the political decision divided the SVO budget of 15 million guilders in three parts, of which 70 per cent will go to the National Science Council (NWO) in order to finance strategic and evaluative research. The remaining 30 per cent of the budget is also divided. One part goes to the ministry for commissioning short-term policy research. The other part is available to schools or organisations of schools which have questions concerning research which is of direct relevance to educational practice. The intention is to improve the use of knowledge by the ministry and by the schools.

The decision to divide the budget is directly related to three specific functions of educational research: to meet the needs of science, to ensure practice and policy, and to inform parties concerned. Pure scientific priorities can be realised within the regular university budgets. The budget that goes to the NWO serves the general function: a strategic and evaluative research programme which generates scientific knowledge of the educational system. This research serves the information needs of science, practice and policy. Policy-makers should remain at a greater distance, especially from evaluative research. A sharper distinction between research functions is more probable within a new institutional constellation than the existing organisation SVO. Though transition from SVO to NWO may pose new problems it will also offer new opportunities.

Possible problems and opportunities

Traditionally NWO research money is allocated by scientific committees on the basis of scientific criteria. Educational research is mainly considered an applied science which means it is a different culture. A second possible problem is the continuity of work for educational research institutes. The national science council is expected to pay attention to the question of human resource management in a scientific field. Although the minister and state secretary may set priorities, it does not mean that transformation of global priorities into research problems will meet expectations. The division of the SVO budget in three parts leads to an increased co-ordination task.

There are also new opportunities. For subject- oriented research in mathematics, science or modern language, educational research within the NWO can profit from new interdisciplinary co-operation opportunities. Greater independence in research and more attention for theories are obvious. From the general science policy viewpoint, it is important that NWO develop the capacity for management of applied research in a social sector like education.

The agreement with NWO lasts for four years after which it will undergo evaluation.

An important precondition for success will also be the attitude of policy-makers towards knowledge. They harbour the instruments to gather short-term information. They must also develop the capacity to store information relevant for the future policy agenda.

Responsible for the preparation of secondary education policy-making, I have in the last five years witnessed the increasing role of competitive sources of knowledge other than scientific research.

The accessibility of statistics has improved both nationally and internationally; reports of the inspectorate have gained in evaluative meaning; and the implementation of policies is accompanied by up-to-date monitoring.

The position of research in the market of knowledge of education is still important but will depend more and more on the quality of information it delivers. The dissemination of research findings to concerned parties -- schools, policy-makers, politicians, etc. -- is essential. This is very important not only for the future quality of the education system but also for educational R&D. Applied science has to demonstrate its value to the financiers -- the tax paying citizens.

2.3 Agreeing on the renewal of knowledge bases in education systems: Ideas based on international work on indicators

by Walo Hutmacher, Director
Research Division of Sociolgy
Geneva Department of Education
Switzerland

The welcome given to the third edition of *Education at a Glance* (OECD, 1995) following on the success of its two predecessors, proves that there is growing interest among policy-makers, administrators and the media in tools that provide insight into education systems. Indicators are gradually making their way into the knowledge base of our education systems and contributing to its renewal. Used for observation and comparison (be it international or chronological), they can also be interpreted to serve as an evaluation tool or provide snapshots of a particular situation.

This paper will not be focusing on published indicators. Instead I intend to look at how indicators are developed and put forward a few ideas on the political problems that may be raised by the development of indicators and, more broadly, knowledge in and about education systems. The term "political" is used here in its broadest sense, i.e. basic agreement-building within communities and groups to achieve the minimal consensus required for living and working together, for decision-making and concerted action. This is primarily, of course, the task of politicians and the government officials who advise or assist them. But building agreements that harmonise opinions, decision-making criteria and policies is not the task of policy-makers alone. On the contrary, their work depends upon a host of agreements between other actors.

If the focus of this paper is on agreement-building, it is because this conference lends itself to such a subject. Policy-makers and experts from many different countries and disciplines have come to discuss how they are going about renewing the knowledge base in education systems. But what is knowledge, after all? It can be found in many forms, some highly intuitive and based on experience and practical know-how, others more theoretical and systematic. It is probably safe to say that what we are looking for here is not beliefs and opinions but a set of data, which I would be reluctant to call "objective" but which are certainly descriptive and analytical, built on explicit conceptual foundations and derived from real-life observations -- in other words, information developed in accordance with the basic rules of social science.

However -- and this is my second reason for focusing on agreement-building -- this information or knowledge base also raises problems concerned with agreement on common or shared definitions of reality. Agreement on such issues does not come about of its own accord. On closer inspection there are masses of other questions: "What is it relevant, useful or necessary to know, and who should know it?" but also "What is it legitimate to know and who should know it?" and "How is it legitimate to find out?". To be really thorough, these and other questions should also be put in the negative, replacing "to know" with "not to know".

Knowledge is a subject of choice, debate and in many cases conflict, involving people who may be in a variety of stakeholder situations and do not share the same views, possess or have access to the same information or share the same interests or plans. Conversely, agreement on knowledge is sought as a basis for consensus, as a single yardstick for assessment, decision-making and action. We seldom pay attention to this potentially conflict-ridden aspect of knowledge because we ourselves are usually involved in the debate and taking sides. Indicators are a specific kind of knowledge tool. They are gradually entering the knowledge base in education systems, or at least that of a small

number of actors in or around such systems. A number of questions stemming from the development of indicators are also relevant to the broader debate on renewing the knowledge base in education systems. When discussing indicator development, I shall endeavour, as a sociologist, to identify some of these broader issues but remain well aware that the subject is inexhaustible. The ideas set out below, which are my own personal views only, are based partly on my long-standing involvement in the indicators of the International Education Systems (INES) project run by CERI, which presented an interim report on this work at its recent General Assembly in Lahti (Finland) in June 1995.

What is an indicator?

As an initial approximation, let us say that it is any figure that provides information, that tells us something. In sociology, it is generally a more or less complex statistical measurement based on systematic observations, scientifically founded from an explicit conceptual viewpoint. None of this is self-evident, particularly in education systems. Quantification supposes that there are phenomena relating to populations (people, events, schools, etc.) that can be classified, measured and expressed in figures. Systematic, scientifically-founded observation supposes that such phenomena can be defined with sufficient clarity and observed in a relatively unequivocal manner. The whole process supposes that it is sound (correct, useful, necessary and legitimate) to base knowledge -- to some extent at least -- on such procedures and the presuppositions that underpin them. We all know people who share these views, but we also know others who reject them or are reluctant to accept some presupposition or another, either outright or in relation to one particular aspect of educational life. And we are all familiar with the saying: "lies, damned lies and statistics".

In real life, we come into daily contact with indicators. We can read a cost-of-living index, for instance, or a GDP statistic and its rate of growth. These indicators enable economic agents (individuals, firms, governments) to know what is happening and make informed decisions. But those same agents are usually unaware of all the agreement-building that went into creating these knowledge tools.

On a more mundane level, we use the instruments and indicators on our car dashboards: speedometers, temperature and fuel gauges, etc. They help us to drive the car and reach our destination, i.e. they continuously provide us with information we need to make decisions. Let us take the dashboard metaphor further to illustrate some of the key questions raised about indicators and how they are developed:

- In a car, instruments and indicators usually provide information on one specific item (e.g. speed or temperature) out of a whole range of phenomena; they are bound to over-simplify the reality and complexity of the phenomena themselves. That complexity may be partially rendered by a combination of indicators (e.g. speedometer plus temperature gauge). So a dashboard is a (miniature) set of indicators, although some are better equipped than others [some are standard on all cars (core indicators), others are optional]. But a set of indicators, however complete, never fully reflects the complexities of real life.

- Indicators are not, of course, the phenomena themselves, which cannot be portrayed directly with sufficient accuracy or objectivity (remember how poorly we guess our real speed as we slow down to leave the motorway). An indicator expresses a phenomenon

via an instrument, and this obviously raises the issue of how valid an instrument it is: does it accurately express what we are trying to measure, and nothing else?

- The reliability of the information provided depends on how the instrument works and what condition it is in; it should not be affected by other phenomena or, if so, the effect must be predictable and stable (e.g. the speedometer must indicate the right speed, regardless of whether the car is on a straight road or a bend, and regardless of wind direction).

- The technical device providing the information is not one of the car's vital parts; it is a special circuit of no use to the car, only to its driver (e.g. the engine works perfectly without a rev counter, which is solely for the driver's use).

- Consequently the information on the dashboard must not be car-oriented but driver- or user-oriented. A car-oriented dashboard would not only differ from any we have ever seen but would probably be more complex and carry more instruments. The choice of indicators depends on the user (some drivers are content with a very simple dashboard, while others want a full set of precision instruments).

- Finally, it is worth remembering that indicators are only instruments. If they provide valid, reliable information, they will help the user to find his way; but it is the user who interprets the information, decides how important it is and makes the decisions (for instance, the speedometer may indicate that the car is travelling at 120 km/hr as it approaches a built-up area, but it is the driver who decides what action is appropriate).

The dashboard metaphor obviously cannot be taken too far. The comparison between education systems and cars will be viewed as simplistic and I am certainly not maintaining that an education system is like a car, nor that it can be handled like one. The levels of complexity are not comparable, if only because education systems have so many "users", "stakeholders" and "steering bodies", all with different objectives and user attitudes. But the dashboard metaphor does shed light on some of the ideas and issues surrounding the development of indicators for use in complex systems. In many cases, the transposition is not irrelevant. For the purposes of this paper, we will retain three key ideas which all emphasise the importance of agreement-building:

1. A set of indicators cannot be based on the education system alone. First because no single type of education system today attracts a sufficiently broad consensus. Second because, as suggested by the dashboard image, a set of indicators cannot be "system-oriented", it must be steerer- or user-oriented.

2. So the question that springs to mind is: "what information do users and/or policy-makers require, and why?" Today education systems involve so many users and steering bodies with expectations that vary from one country to the next. National education systems all have their own history, culture, structure, regulations and *modus operandi*. Within each system, there are so many steering bodies and users with different and sometimes conflicting interests and knowledge requirements. Not surprisingly then, ideas abound as to the indicators it would be relevant, timely and feasible to develop, and of course people have opposing views on the subject -- especially since educational scientists have already been at work here. Numerous avenues have been explored by researchers, but they still do not have a ready-made, coherent set of indicators that wins unanimous support.

3. Any set of indicators, however complete, has necessarily been selected from a wide range of potential indicators; this implies that others have been rejected. Precisely because it is a selection, a set of indicators depends on the definition of what it is considered relevant to know and/or reveal about education systems, and this definition -- which may vary -- is drawn up in the political/expert arena.

Renewing the knowledge base is part of a new political framework

The launch of the INES project and the shift it generated throughout OECD Member countries occurred in the late 1980s, at a time when a variety of political actors were calling for better measurement of the education systems for which they were politically or administratively accountable, and expressing the need for a much wider range of reliable indicators. At that time, indicators were already available. The OECD, for instance, regularly published education statistics on its Member countries, together with other more complex data such as enrolment figures or educational expenditure as a share of GDP. But there were two problems. First, the reliability of these indicators was criticised by specialists on educational statistics in various countries, thereby detracting from their credibility and comparability over time and across countries. Second, the indicators available were no longer deemed sufficiently relevant. One particular criticism was that they did not cover education-system processes and outputs.

In 1987 (Washington, DC) and 1988 (Poitiers, France), OECD and the host countries held two international conferences to discuss the evaluation of education systems. They clearly revealed the need for more information on education systems -- their features, accessibility and cost as well as their impact in terms of quantity and quality. The conferences also highlighted the determination of OECD countries to improve the comparison of education systems from a variety of angles and to find ways of assessing their performance and of evaluating and if necessary enhancing the systems. Both conferences lived up to expectations and produced a welter of ideas and proposals; hopes were high, although often vague and sometimes contradictory. However, the expert group that met in Paris to take stock of the two conferences soon realised that the entire set of indicators for education systems at international level had to be taken back to the drawing board, expanded and at the same time made more reliable.

In the 1960s and 1970s most OECD Member countries preferred a certain type of indicator. International comparisons looked, in particular, at investment in education, enrolment in post-compulsory education (accessibility) or class sizes (teaching conditions). Their preferences were in line with the key themes of education policy at the time, aimed primarily at raising general educational standards among young people by broadening access to higher education. At the time, the more a country invested in education and the greater the enrolment in higher education, the more it was seen (and saw itself) as being well on the way to achieving the ideal of high educational standards in a society where schooling was on the rise. The corresponding statistics and indicators did not appear by magic; they had been discussed and defined during the 1960s, at a time when education policies were changing course in many countries. The INES project also coincided with a shift in educational policy thinking. In terms of the sociology of knowledge, it could even be viewed as a sign of a deeper shift in political concerns. Industrialised countries did not give up their aim to improve educational standards -- on the contrary, this was seen as vital by everyone. But three issues took on a high political profile in the early 1980s, namely the quality of youth education, the effectiveness of training systems (i.e. linkage between objectives and outcomes) and the efficiency of

training systems (i.e. linkage between resource commitments and observed outcomes). So there has been something of a paradigm shift, of which at least four aspects are relevant here:

1. Under the impact of policies to develop opportunities in education, there has been a sharp rise in government funding. But even in affluent societies resources are growing scarcer, in particular because other equally legitimate policy areas are claiming more resources; at the same time countries cannot very well increase levels of taxation for fear of seeing their economies become less competitive. Education is priceless but does carry costs. Whether more can be done with the resources available is a common issue today. Hence the demand for greater control over resource use. Two prerequisites of greater transparency in this area are more consistent statistical data and more reliable indicators.

2. At the same time there has been a change in the demand for educational quality. New educational ideas have taken root, in particular among the wage-earning middle classes who are becoming the majority in industrialised countries. These new ideas on education place more emphasis on motivation than on heavy discipline. They are also based on the postulate of extended educability, or the idea that any child can be educated, providing that the right methods are used. By taking "High quality education and training for all" as the theme for their 1990 meeting, OECD Ministers of Education highlighted this trend and the postulate behind it. Finally, there is the more radical issue of educational outcomes, or knowledge and skills. Are young people learning what they are supposed to learn? For various reasons, qualifications are no longer seen as wholly credible proof of learning -- all the more so since, apart from curriculum-based learning, education outcomes are also judged increasingly in terms of cross-cutting skills such as ability and willingness to learn, self-confidence, ability to communicate, etc.

3. Public expectations are very high in this area, whereas public confidence in schools is quite low, as can be seen from the OECD's *Education at a Glance*. By and large, the considerable increase in the education supply has not attenuated a certain dissatisfaction with education systems. Stemming from an accumulation of all kinds of minor complaints that are highly individual and often contradictory, average dissatisfaction remains relatively high. Faced with such expectations, education systems can no longer respond solely by going on the defensive or taking a Utopian stance. Their legitimacy is under attack partly because they have no credible tools with which to measure and evaluate their impact.

4. It is said that there is no future for schools as they are today, that it is not enough to demand or offer "more of the same" -- schools have to invent something new. This implies that better schools would be different schools. Throughout the world, reforms are being introduced to transform not only the curricula and pupil guidance and selection structures, but also education-system management (the key words being decentralisation and devolution; strategic guidance rather than planning, targeted learning patterns and pathways, etc.) and the methods used to monitor the work of school staff and pupils (by assessing the achievement of targets rather than laying down procedures). This new approach to school management in turn requires new management tools at macro-system, meso-system (school) or micro-system (pupil group) level. The paradigm shift is far from over. We are still not in a position to measure all its causes, implications and repercussions. These four aspects do not reflect the full picture. However, the demand for a renewed knowledge base is clearly connected with the shift. A sound (i.e. shared) analysis of the major changes affecting education systems and policies can provide

insight into the need for new bearings. It can also help to map out these new bearings and guide the design of new knowledge tools and indicators for education systems. The INES project is part of this work.

In all honesty this background analysis is somewhat *post hoc*, as is the conviction that a set of indicators -- an integral part of the knowledge base in education systems -- can only emerge through agreement-building between experts and users. This was not the view initially expressed when the INES project was launched, but it has steadily gained ground, grown sharper and attracted a consensus as experience has been gained and the debate between the actors and experts from international networks has advanced.

The debate has brought together people from different national horizons, be they school officials and educational policy-makers or researchers and statisticians, and this deserves special mention because it has generated a flow of ideas that has been a key factor in advancing both the project's design and its implementation. This is one of the great lessons of the INES project. Two major obstacles have had to be overcome. The first is nationality. Our education systems are deeply rooted -- even buried -- in national history, or in many cases nationalist culture. We all used to think that our own education system was incomparable -- fundamentally different from all the others and the best in the world -- and that the problems it faced were also unique and impossible to compare. Thanks to international co-operation, the INES project has helped to show its partners how closely interrelated education systems really are, as are the problems they face, and how to identify features that are genuinely country-specific. The second obstacle to disappear has been the dividing line between specialist areas in the INES project. Five years ago, dialogue and co-operation between statisticians, policy-makers, government officials and researchers seemed laborious, if not impossible. Today they are seen as vital and a source of enrichment, in both international and national meetings.

Experience has shown that the development of a set of indicators for education systems is only possible via a process of negotiation and concerted effort, in which a host of different partners seek to reach agreement on the answers to three major questions:

1. What should indicators show?

2. Can it be measured? Can it be measured properly?

3. Is the measurement technically, economically and socially feasible?

At different stages and points in time, the search for adequately consensual answers to these questions involves both policy-makers and officials, users of and agents in education systems, experts on education statistics and education scientists. The INES project is therefore a huge undertaking in terms of international, interdisciplinary co-operation and collaboration. Since 1988-89 it has been permanently mobilising the skills of some 300-400 experts from initially 17 and now 26 OECD Member countries. Managing such a project is in itself a challenge which, it must be said, has been met outstandingly well by the OECD and its secretariat. The networking formula has been particularly appreciated and effective. In these international networks researchers, statisticians and officials have been able to meet and become acquainted, make the most of their pooled experience and gradually reach agreement on indicators in their particular field.

What should indicators show? What do we want to know?

This is the first question that springs to mind. What should we find out and pass on via statistical indicators? What measurements are relevant, useful, desirable and legitimate when it comes to education systems? The answers to these questions are far from simple, in particular because, as we saw earlier, a set of indicators cannot be system-oriented -- they are much more user-oriented or steerer-oriented. The answers will always have a policy-related or practical angle and a scientific or conceptual angle. But policy-makers/practitioners and experts do not agree even among themselves. The needs, expectations and priorities expressed by governments differ depending on the country, its strategic options and the prevailing ideology. Experts put forward ideas that often diverge according to the disciplinary and epistemological focus, and are not necessarily consistent with the aspirations of policy-makers. In other words, the only sure point -- inasmuch as it is an observed fact -- is that these are issues open to discussion and wide agreement-building is called for. This may be easy (on subjects such as enrolment in secondary education) or more laborious (indicators on attainment or decision-making in education systems). Contention may stem from relevance, political urgency or conceptual issues. A shared analysis of the new context that surrounds education systems and is reshaping their policies and management approach has certainly done much to bring about consensus. The shift of focus from inputs to processes and outputs has in any case imposed a broader policy framework in which to map out the main areas to be covered by the indicators.

This is the purpose of the INES framework plan which in short defines three major areas that are systemically interrelated. The simplicity of this basic model can sometimes be misleading. The inclusion of certain indicators under a particular heading in the framework plan does not necessarily restrict them to that category only, in particular because, depending on the time-horizons used, some of them measure phenomena that are not only outcomes of the education system but also features of its context, for instance public confidence in schools and the educational attainment of the population. This touches on one of the central features of human systems in general and education systems in particular, namely that they ultimately help to create their own cultural, social and economic context. The context in which education systems are set (demography, economics, attitudes and expectations, etc.), resource commitments, educational structures and processes (human and financial resources, participation in teaching, organisational structures, etc.), and educational outcomes (student learning and skills, qualifications, labour market entry, etc.) A detailed list of these fields is given in the 1995 *Education at a Glance*. This very open framework has allowed the project to advance quite pragmatically, precisely because it is open and does not impose *a priori* too many constraints on the extent to which partners agree. It has provided great scope for network creativity.

As the project has advanced, it has had to adopt a few basic rules that also relate directly or indirectly to agreement on international indicators and the nature of those indicators:

1. Participation in the project: indicators do not necessarily have to be adopted by each country as soon as they are devised. Some are presented as experimental or trial indicators before being more widely recommended and adopted by the majority. In fact country participation in the various networks and working groups is voluntary. Some networks began with a large number of countries, others with only six or seven. Most now number about twenty. Project organisation is now a problem in that, even if the cost to individual countries is lower than if they had worked on their own, they are each having to spend more and more. The last General Assembly held a long discussion on this issue, concluding that in many fields there was sufficient pooled knowledge and trust within the project for smaller working groups to prepare certain dossiers on behalf of

everyone, without involving every country in the full process of conceptual collaboration. This new way of working will probably require broader, faster communication channels.

2. Linkage between national and international sets of indicators: while a set of indicators is being developed at international level, Member countries are also developing their own national sets. Thanks to the INES project, a very active process of emulation has begun between the two, some national sets of indicators being richer and some poorer than the international set. The INES project works on the principle that international comparability is a definite asset where national indicators are concerned. So the rule is that the indicators selected at international level should largely be a sub-set of those deemed relevant at national level. In particular, the rule seeks to ease the burden on individual countries of having to provide international statistics.

3. Type of statistical measurement: at international level, countries are compared with one another, generally using averages or central values based on country aggregates, e.g. the enrolment of 17 year olds. Such indicators measure differences between countries, but make no allowance for possible disparities within countries. Occasionally countries need to be compared precisely in terms of such intra-country disparities. For instance, are gender or socio-professional disparities, or disparities between town and country or affluent and poorer areas, comparable across countries? In this case, disparity indicators have to be used in conjunction with the central values reflected by national averages This can sometimes be done by disaggregating population groups (e.g. the average national value for men and for women). In some cases, in particular when sub-groups would be too numerous or country-specific (e.g. states, provinces, regions or cantons), an indication can be given of the degree of variation between sub-groups with the highest average value and those with the lowest.

The framework plan and these few rules determine the scope for meetings, exchanges and discussions which give substance to the undertaking. I should like to emphasise how necessary and valuable such debate can be, since it is important for policy-makers and officials to shoulder their responsibilities in this process, as the experts are doing. That is the price to pay if the aims of this undertaking are to be shared and based on a realistic and open common analysis of the changes taking place in and around education systems. Moreover, a set of indicators is based on a set of reliable statistics, relatively stable in terms of design and sustainable in terms of use. If the set is international, its design and use must also be the focus of collaboration with all the countries concerned. As well as conceptual and methodological issues, we must not lose sight of the organisational side of indicator sets and the statistical machinery they are bound to involve. This aspect deserves attention at international level and perhaps even more so at national level. It costs time and money to design and implement a system of statistics, and this is an important issue. But project organisation also implies resource legitimacy, a combination of two separate but interrelated factors: 1) the time and money given over to producing statistical data and indicators are, somehow or other, subtracted from the other functions in an education system and this can pose problems; 2) statistics are supplied by reporters (students, parents, teachers, headteachers, etc.) who must somehow be persuaded that it is necessary, useful and relevant to provide the right information in the correct form. These are the two issues I should like to develop a little further.

Is what we want to know measurable? Can it be grasped? The acceptability issue

In the literature on indicators, the issue of whether it is possible to measure the aspects of the system that is to be understood and reflected through indicators is often confined to the conceptual, methodological and technical problems which are the special domain of the experts. Policy-makers and officials are assumed to be only marginally concerned by the question: "Is it measurable?". Questions of theory and method must of course be addressed. Expert debate should be able to provide a definition of the relevant phenomena and answer questions such as: "How can they be measured? What criteria govern the validity, reliability and comparability of all the possible or conceivable measurements?". The debate should lead to some agreement as to the appropriate theory, methodology and technology. There are some excellent publications on the subject, so it need not be addressed in detail here. A point worth mentioning, however, is that agreement-building among experts is important in political terms, because it does much to determine the credibility of both data and indicators.

The involvement of policy-makers does not stop there, however, since at the same time and on a more practical level there is the issue of acceptability -- of measurements, methodological observations, quantification and the indicators themselves. And this is an eminently political issue.

In and around education systems, there are innumerable aspects that could be considered important to know in greater detail, judging from answers to the previous question ("What should indicators show?"). Yet there are relatively few questions for which quantified answers or indicators have so far been found. Could it be that most of the interesting aspects of education systems or schools do not lend themselves to quantified observation and description? This is quite a common argument. But the matter is not as simple as it appears.

A long-standing debate has divided social scientists for the past twenty years or more on the subject of "quantitative" and "qualitative" approaches. In fact the issue is just as topical among those who specialise in the evaluation of schools and education systems. In this debate, it is better not to choose sides but instead adopt an open, eclectic attitude and consider that the right approach depends on the problem in hand and on the scientific and practical context. Quality-led approaches (case studies, action research, participative observation, etc.) put the emphasis on the discovery or understanding of certain dimensions, issues or ways of functioning in human systems that cannot be directly quantified -- not, that is, until they have been discovered and subjected to theoretical conceptualisation. This kind of research clearly has an heuristic function. It occasionally produces some highly interesting categories or typologies, but more needs to be known about their exact weighting in the social environments or populations concerned.

On the other hand, surveys of attitudes, expectations, opinions, representations or attributions have shown that it is possible and worthwhile to measure such phenomena, in spite of their strong "quality" component, and to estimate their frequency and conduct statistical analyses of their determining factors. What can be more "quality-led" than differences and relationships between men and women? Yet gender is one of the most common categories in any statistics, including those on education. But this example also reveals that the problem does not necessarily lie in counting or quantifying, but in the meaning attributed to the various categories. For instance: is gender treated merely as a biological characteristic in individuals? Is gender-based social differentiation taken into account? Quantification makes sense particularly when dealing with human systems or sets involving large numbers of people or actors or large numbers of sub-sets or sub-systems (e.g. classes or schools), when the aim is to perceive or compare the state and diversity of characteristics or performance. The characteristics or performance to be measured are indeed "qualities" which need to

be defined from a conceptual standpoint, which must of course be justified. While the standardisation of the tools required for large-scale observation (questionnaires, checklists, etc.) does restrict the focus, at the same time it makes for considerable rigour and transparency of observation; it makes it easier for third parties to appraise the method used, and encourages reproducibility as well as changes of approach. This is probably one of the keys to its success.

But the quantitative or statistical approach is all too often associated -- sometimes wrongly but usually correctly -- with a positivist epistemology that is outdated and simplistic. By the same token, it leads all too often to simplistic interpretations by researchers as well as by users, the public and the media. This important issue of social uses for knowledge bases deserves further study, but does not fall within the sphere of this report.

A priori and without excluding other approaches, the quantitative approach does seem an apt way of describing many aspects of education systems and their internal diversity, since they are always large-scale entities consisting of heterogeneous actors and units; insight into the characteristics and performance of such units from a variety of angles provides a means of evaluating the state of the system, fostering internal reflection and guiding policy. It is therefore surprising that the aspects which education systems have actually quantified are relatively few and far between.

Conceivably, education systems are reluctant to use quantified measurement. In any case, the statistical approach is not part of their conventional procedures, their organisational culture, or their methods of self-appraisal. Experimental pedagogy, for instance, which has developed quite rapidly on a theoretical level over the past thirty years, has made little headway as a method regularly used in schools. It is as if methodical, quantified observation contravenes some rule or principle in the way education systems operate. At least three avenues need to be explored. First, as in any bureaucratic organisation, the idea of diversity which is at the very base of the statistical approach seems to run counter to the principle of uniformity, in many cases still presented and perceived as a guarantee of equity in education systems, be it among students, staff or schools. Second, comparison is viewed as taboo in education systems, except in student assessment; in this highly individualistic environment, there are only special cases. Third, the pedagogical culture is still dominated by a sense of the ineffable, the feeling that it is impossible to describe, explain and above all measure child development or educational processes, that this is all part of the "mystery of mankind". Rightly or wrongly, methodical observation and quantification are rejected by some actors (officials, teachers or parents) as being pointless or even a threat, either because such methods cast doubt on certain fundamental beliefs and certainties, or because they appear to be connected with the idea of evaluation or monitoring.

These facts have to be faced when addressing the issue of indicators, i.e. the possibility of methodically recording and quantifying a number of phenomena in and around education systems. This is because statistics are based on the information supplied by reporters and, if these people think that the approach is pointless or threatening in some way, it will jeopardise the reliability of the information they collect. This goes well beyond the field of statistics or indicators; it applies, *mutatis mutandis*, to any project aimed at renewing the knowledge base in education systems using the scientific approach (be it quality- or quantity-led). Methodical observation requires people or environments with at least some interest in providing information or observations.

The acceptability of educational science is being debated within education systems and their environment. There is still no broad agreement on the thrust that the scientific approach should take, i.e. whether it should be quality- or quantity-led. The government stance is decisive here, since it determines the focus and direction of the debate. But statisticians and researchers cannot stand on the

sidelines. Acceptability criteria to some extent reflect the image and culture of a pedagogical organisation and its management methods. But interests are at stake here too: there must be a healthy climate of trust, in particular between professionals, first in order to reassure those concerned that the information they provide will not go against their own legitimate interests, and second to give them plausible grounds to believe that the approach will, indirectly at least, help to improve the conditions in which education policy goals are to be achieved. The complex ethical problems this raises have not yet received the attention they deserve. They are linked to the paradigm shift mentioned earlier, in particular when knowledge is aimed at coping better with change and affects steering and management methods.

Is measurement feasible? The resource issue

The acceptability issue leads us straight to the feasibility of statistical measurements and indicators, particularly when it is a question of developing more complex ones, closer to the world of school, such as student knowledge and skill achievement. When, as Claude Thélot shows, the French Ministry of Education launches an operation to test 800 000 pupils, it is acting as a pioneer not only in terms of theory and practice but also in actually undertaking such a large-scale operation.

Acceptability inevitably raises the issue of the goals that justify such a resource commitment in the eyes of policy-makers of course, but also in the eyes of teachers, students, their parents and the public at large. In a recent publication, *L'évaluation des systèmes éducatifs*, Nathan Université, 1993, Claude Thélot justifies systematic observation and evaluation in education systems in relation to a notion of change in teaching systems:

-- "To provide all the actors (teachers, administrators, etc.) with food for thought on the state of the system in which they work and, indirectly, on their own action within the system;

-- To use a comparative approach to give more insight, a better understanding of systems, schools or, more generally, education units, and also to foster a degree of emulation among them. The ultimate aim of these two functions -- the first internal, the second external -- is to improve schools thanks to the policy shifts they generate."

If this is indeed the purpose of efforts to renew the knowledge base in education systems, the issue of resources must be tackled. These undertakings are bound to be expensive. Is such expenditure legitimate? The question was also the focal point of discussions at the General Assembly of the INES project. Developing indicators and more generally renewing the knowledge base are not goals in their own right; they are pathways towards the improvement of teaching systems and their constituent parts. When the subject arises of committing resources to new knowledge bases, the tendency is (still) to consider the costs alone, without the benefits. Would it not be fairer to view them as investments in the capacity to innovate? Education systems in all our countries are facing the difficult task of doing better and more with the same or fewer resources, in other words improving productivity, to mention a problem that is common in the world of business.

Without wishing to transpose solutions straight from business to education, there are some lessons to be learned from the sociological study of businesses as changing, learning organisations. In particular, studies of corporate productivity growth show that, to enhance performance, firms have invested considerable resources in the production and/or acquisition of knowledge connected with their products, production/distribution methods and division of labour, namely scientific knowledge,

technological and methodological know-how, but also marketing research and management studies. This knowledge-based strategy has paid off, in industry, agriculture, banking, commerce and finance.

Investment in knowledge is on the rise because it contributes to quality and/or productivity gains. Medicine, a field closer to education, is a good illustration of this. In comparison, education systems appear to operate along entirely different lines. They are generally weak on functional targeting and they tend on the contrary to send most of their resources straight "up front" i.e. to the classroom, working with pupils. No-one will contest the need to do this, of course. The habit of grouping forces "up front" is in fact deeply rooted in the school culture and pressure from teachers and parents ensures that it remains so. However, in terms of internal targeting, teaching systems resemble late 19th century coalmines, steelworks or hospitals rather than the most dynamic sectors of the present day. Proportionally speaking, it is striking to see how few resources are allocated to work on knowledge or strategic investment in knowledge (little research, little technological development or the equivalent of marketing). According to the latest edition (1995) of *Education at a Glance*, the estimated share of resources allocated by teaching systems to educational research is between 0.15 and 0.4 per cent. This is derisory compared with the leading-edge industries. Today in the chemicals, data-processing or biotechnology industry, for instance, firms devote between 12 and 15 per cent of their turnover to research and development, excluding market research -- in any case 30 times more than education systems.

In spite of the impression that expenditure on knowledge bases is very high, our level of investment is in fact too low for any real impact on innovation potential. Here too the debate is still under way with no lasting agreement in view.

By taking indicators as an example, I have endeavoured to show that the renewal of the knowledge base is of strategic value to the renewal of schools and education systems as a whole; however, against a background of different and sometimes conflicting interests, there must be simultaneous and sustainable commitment on the part of both experts and policy-makers. These two otherwise independent worlds can be mutually supportive. Both can lend legitimacy to choices and agreements on relevant, valid and reliable knowledge, on rules for updating and changes, and on resource commitments. In this sense greater co-operation between the two is a vital prerequisite if education systems are to improve in quality and effectiveness.

2.4 The role of inspectorates and country policy reviews

by Georg Knauss, Chairman
Schools Committee
Standing Conference of the Ministers for Culture and Education
Germany

This important conference deals with various elements of knowledge bases for national education policy-making. Having discussed the roles of educational R&D as well as monitoring and educational indicators, it is now appropriate to address the contributions which national inspectorates and OECD education policy reviews could make or actually do make to the general aim of this conference.

The two themes are quite separate from each other. However, they do have one common denominator, which is the idea of evaluation. Evaluating individual schools and school systems as a whole is becoming more and more central to discussions, both in OECD Member countries and in the European Community, since it appears to enable us -- to use a tautological phrase -- to make qualitative statements about quality, and quality, of course, has become a main concern of many countries.

I shall approach the two themes by telling you in each case a story from my personal experience. The first story dates to the time when I began working in the Bavarian Ministry of Education. In discussing the teaching situation in Germany, one boss said with a sigh in his voice: "If we only had inspectors like the HMIs in England, then we would know much better what is really happening in our schools". Now, 30 years later, Bavaria still lacks a national inspectorate of the kind HMI used to be, though much is happening. Of course the provisions for national inspection in England have also in the meantime undergone profound changes.

The role of the inspectorates

All will agree that inspection as such has always been a feature of education systems. The word itself is derived from the Latin "inspicere" which means "to look into something", and from "inspectare" which is the intensive form of this verb. "To look closely into the school system and into the schools" then is the task of inspection and inspectors. Inspection has always been linked with the idea of evaluation - as the poet says: "To delve and measure and compare" and draw conclusions out of the manifold observations inspection has produced.

It is also a fact that evaluation and inspection have taken different institutional forms in the various OECD Member countries. In *Educational Evaluation and Reform Strategies* (SME/ED (91)15, April 1991), the Secretariat points out very adequately that "educational quality policies and any evaluation strategies linked with them divide Member countries both in theory and in practice". The paper distinguishes two groups of countries:

- countries where education authorities feel that the state education service could only be mobilised for this purpose -- the improvement of quality -- through emulation between schools based on the wide circulation of largely external evaluation of pupil performance; and

- other countries where any competition between schools is avoided and pupil assessment is more systematically co-ordinated with other internal strategies like teacher training, curriculum development, and school plans aimed to promote a policy of overall improvement in the education offered.

It is obvious that the first group of countries -- often by long tradition -- rely on central and general inspectorates as institutions which in most cases are independent of the administrative function in the education system. Countries such as the Netherlands, Belgium and France belong to this group and evidently England though its inspection function has been partly privatised -- a surprising development to many.

In other countries -- of which German Länder are prominent examples -- inspection is part of the administrative function of governments. Inspectors act on behalf of the government, are subject to orders and work in a sort of closed-shop in the inner circle of educational administration.

Though organisational patterns differ, there is widespread consensus about the tasks which inspectors and inspection should perform. The following quote is extracted from a very pertinent description contained in the excellent OECD report *Schools and Quality* published in 1989. According to this report such tasks are:

> "ensuring that statutory regulations are observed; reporting and making recommendations to the minister or responsible authority on particular schools or particular curricular developments; promoting the improvement of education through consultation; planning and taking part in in-service education and training for groups of teachers and school leaders; leading and inspiring curriculum development in a subject or an area of the curriculum; assisting in the implementation of policy decisions; judging the performance of individual teachers periodically; being an appeal authority for parents and students with complaints about their treatment".

It is clear that all these tasks are neither applicable to all countries with central inspectorates nor to those with a decentralised pattern of inspection. To ensure a solid knowledge base to policy-makers, it is obvious that the task of reporting and making recommendations to the minister or ministry about what is happening in schools and what should be changed is of prime importance. This in turn presupposes regular visitations and inspections of schools "on the spot".

The report *Schools and Quality* also mentions two points which need further discussion in detail: the professional status of inspectors and the independence of inspectorates.

All would agree that the professional status of inspectors has its foundations in excellence. Inspectors must have proved in theory and in practice that they are highly qualified for the tasks they have to perform. Their mastery of teaching subjects and their teaching experience must be of such an order that they will be accepted by their "clients" as unquestionable authorities in the field. Their knowledge of scientific and methodological developments in their subjects must be up-to-date and they should have had, if possible, some specific preparation for their work as inspectors. I would hesitate to accept people with other than pedagogical qualifications for the job.

The question of independence is, of course, of special importance. The report on *Schools and Quality* argues that "although inspectors cannot distance themselves from government policies, it is essential for them to retain freedom from political interference on all professional matters, and it is also desirable for them to retain independence from the bureaucratic machinery so far as possible". I

must confess that I consider this an ideal "devoutly to be wished", to use a Shakespearean term. Thirty years of experience in administration have taught me that professionalism in administration and inspection is usually accompanied by mutual respect on both sides of the fence and no tendency to subdue reports even when they are critical of administration. To question one's own position is an important characteristic of modern management.

It is essential that reports and other findings of importance receive the attention they deserve by policy-makers and those capable of making changes. Whether the relevant information comes from independent inspectorates or from internal inspection systems is therefore not what matters.

There can be no doubt that central inspectorates or their functional equivalents play a vital role in furnishing a solid knowledge base for the purpose of evaluating and monitoring education systems. Their qualitative judgements are necessary corollaries of the more quantitative aspects which can be provided for by educational indicators. Their functions and institutions should consequently be strengthened in the future. The OECD has indubitable merits in this respect. It has not only investigated the field, but has also over the years supported a number of meetings of European inspectorates for a very fruitful exchange of information and experience. If plans to establish a Permanent Conference of Central and General Inspectorates are realised, then these initiatives will have produced very promising results for the future.

Country policy reviews

My second story relates to the first and only country review of the Federal Republic of Germany by the country itself in 1971. It was immediately apparent that the examiners had little understanding of the traditional federal system of education in Germany, its functions and its problems, when they overtly sided with the newly-founded Ministry of Education and Science in Bonn. A well-known German politician afterwards wrote a book entitled: *OECD exam: German education system insufficient* -- "insufficient" being the lowest possible mark to grade pupil performance. The consequences of this traumatic experience for the German Länder are still obvious: it was very difficult to receive political support for German participation in the cross-national thematic review on higher education now under way.

As member of the OECD Education Committee, I have had the honour to attend many OECD country reviews over the years which in my view, and that shared by my German colleagues in the Committee, rank among the Organisation's most prominent educational activities. There are three reasons which we consider to be the specific strengths and benefits of these reviews.

The first is that the country reviewed has the chance to consult with external experts, who with a critical and hopefully benevolent eye can perceive developments and problems more clearly than politicians and administrators at home. The elaboration of the background report which is an indispensable part of any review means not only taking stock, but also critical analysis, and proves to be a very wholesome exercise. The review process which often lasts over a year provokes discussion not only with examiners, but also among authorities at home and can help clarify ideas and concepts.

The second benefit lies in the invaluable information transmitted to other OECD Member countries on the realities of other education systems and in the identification and discussion of common questions and problems.

The third is to provide the OECD secretariat with first-hand factual knowledge about happenings in OECD Member countries which for example is a necessary prerequisite for the various projects undertaken by CERI. It would therefore be useful if members of the Secretariat were involved in the reviews.

Nothing of course is perfect, and there is always need to think about improvement. Country reviews are very valuable instruments of international co-operation, but there is a certain danger of routine and repetitive processes. One aspect is of prime importance -- the country under review must be willing to open up and be frank when presenting its situation and problems. Both examiners and examined must develop an atmosphere of mutual trust; offensive or defensive attitudes are sure to prevent productive arguments and results. It is necessary to be clear from the very outset which particular interest exists in the country under review regarding the aims and possible results. Countries are sometimes in the midst of ongoing reform processes and may wish to have interim assessments and results. In such a case provision should be made to accelerate the review process, particularly with regard to publication of the background report and the examiners' report.

Ties with relevant ongoing work in the OECD should also be strengthened, especially regarding the development of education indicators. Basic statistical information should be as comparable as possible. The background reports might include a set of common indicators, and examiners might be prompted to make suggestions about other indicators or investigations on the basis of their observations during the review process.

Regarding a topic very much under recent discussion in the Education Committee, there should be no dichotomy between traditional country reviews in their revised form and the thematic reviews which sometimes appear as the form of the future. The traditional review permits a comprehensive look at tasks and problems, and shortcomings and successes of an entire education system with cross-connections to the economic and labour-market policies of a country. The thematic review allows an intensive discussion of a smaller area by preparing comparative information about the situation and developments in a number of countries. In both cases the focus of the questioning should not be defined too narrowly, otherwise the reviews would be in danger of losing general interest. There is no place for microplanning in the OECD context.

The final and enduring problem is that there are too many countries wishing review and too little time and space in the framework of the Education Committee for all to be considered at the very time they need results. On the other hand, large OECD Member countries such as the United States, United Kingdom and Germany seem hesitant to expose themselves to review, though their educational policies would be of special interest to others. France is a laudable exception. A new dynamics has entered the review activities in the wish of non-Member countries in Central and Eastern Europe to be reviewed. It is evident that they expect aid and support for their efforts to transform their education systems into more modern and more democratic institutions.

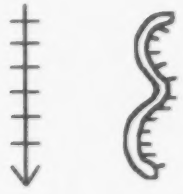
We should encourage the OECD to continue and intensify its efforts for the educational policy reviews of Member countries. There is no doubt these reviews constitute an invaluable and very efficient instrument for the creation of a firm and solid knowledge base within Member countries and for international co-operation. I cannot think of any other which could replace them adequately.

2.5 Knowledge: The backbone of policy-making

by Mark Frequin, Director
Strategic Policy and Control
Ministry of Education, Culture and Science
The Netherlands

Backbone

Knowledge is the backbone of policy-making. Without knowledge it is impossible for policy-making to exist. Similar to a backbone, knowledge has to be solid as well as flexible to be of service to policy-making. We have learned much about the relationship between policy-making and knowledge through several OECD activities. I will attempt to provide a kind of framework to structure all these OECD activities. This framework also provides the opportunity to formulate some hypotheses.



Dimensions

According to several OECD projects and conferences in preceding years, two dimensions are relevant for this conference.

Policy <-----> Knowledge

The inter-relation between policy-making and knowledge includes two important players:

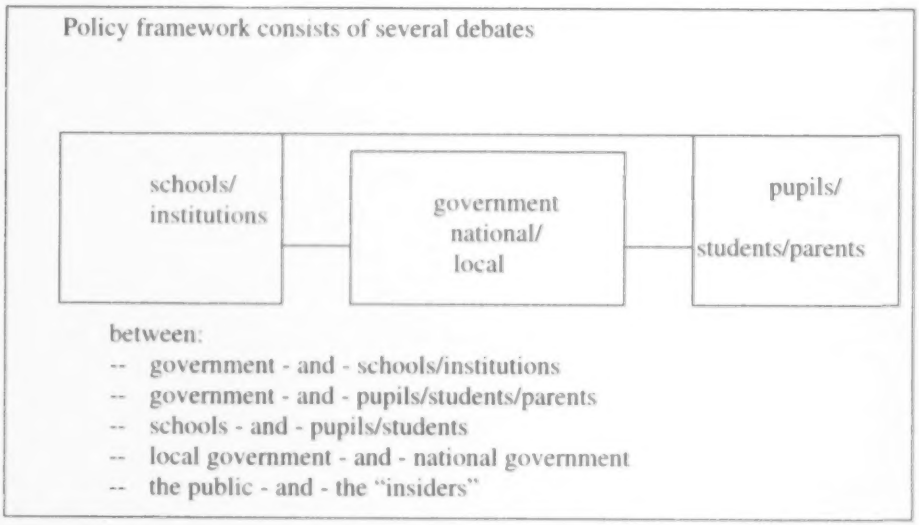
- *Government*:
  - government has to formulate questions; does government have the capacity to formulate questions?;
  - government is changing; the changing role influences the knowledge which is needed.
- *Knowledge*:
  - knowledge is a plural concept; a plurality of knowledge is given;
  - knowledge providers must ask questions; they must listen to policy-makers.

What matters is the transmission between policy-makers and knowledge-providers.

National <-----> International

The relationship between policy and knowledge is primarily national. But national facts and figures need a form of benchmarking. International benchmarking is the most interesting form at the moment. Certainly in OECD surroundings this national-international dimension is highly relevant and accentuated.

Policy-making


Policy framework consists of several debates
schools/ institutions
government national/ local
pupils/ students/parents
between:
-- government - and - schools/institutions
-- government - and - pupils/students/parents
-- schools - and - pupils/students
-- local government - and - national government
-- the public - and - the "insiders"

The following are relevant for the relationship between policy-making and knowledge:

-- policy-making consists of several debates and is part of a public debate; it is a dialogue and a complex one;

-- formulating goals and setting standards in policy-making is related to these debates;

-- this means, for example, that knowledge of educational practice and results are of utmost relevance to policy-making;

Policy-making is changing, in terms of:

-- position of pupils/students becomes more relevant;

-- results of pupils/students become more relevant;

-- more accountability;

-- the public takes part in the debate;

-- although mostly national debates;

-- the international component becomes increasingly important.

Knowledge

The knowledge framework is:

	national	international
qualitative		
quantitative		

Knowledge is divided between products of knowledge and bodies of knowledge. Examples of products of knowledge, especially concerning the OECD, are statistics, indicators (INES), key factors, research (CERI: "What works in innovation"), review (OECD country reviews or national inspection.

Examples of bodies of knowledge are statistical agencies, inspection, research institutes. In this area, international and national co-operation become more and more relevant: international co-operation like INES and IEA; national co-operation between research institutes and inspection.

Policy-knowledge/hypotheses

a) Close contact

For policy-making as well as for the knowledge base, close contact is needed. It should be an open relation with clear positions and good listening.

b) More "results" orientation

Policy-making is more and more results orientated. It therefore needs more outcome knowledge.

c) Not so much

It is not so much requirement of knowledge but selection in knowledge which is the issue. For example, the INES discussion on indicators: we need less indicators.

d) Balance of short and long-term

Policy-making always concerns today. Short-term knowledge is therefore essential. But making changes is a long process. Education is also a long process. Long-term knowledge must not disappear because of short-term violence.

e) Different policy-makers and different knowledge

Always ask: for whom? Who the policy-maker is and what he or she needs is what matters. It depends on such aspects as the person, the period, the circumstances, and the position.

National-international/hypotheses

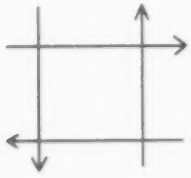
a) Always an international component

Given the need for benchmarking, it is no longer possible to provide knowledge without an international component -- especially in higher education.

b) No fragmentation

The international arena can be used to structure and contribute knowledge.

c) Different forms of co-operation



International co-operation is possible through combined research, exchange of knowledge (between researchers, instruments, results), international funds, and combined agendas.

d) Intelligent mix of multi-lateral and bi-lateral

Co-operation is essential in a multi-lateral setting, such as the OECD, as well as in bi-lateral co-operation, for example between Germany and Holland or Holland and Austria or Holland and Flanders.

e) Cross-curriculum results

Given the importance of outcome-knowledge and of exchange of international knowledge, it is essential to have results which are not strictly related to curricula.

Discussion

I hope that it will be possible to discuss these hypotheses in working groups. Like Baron von Münchhausen, who pulled himself up out of a swamp, we must do the same for ourselves.

3. Sectorial Perspectives on the Knowledge Bases

3.1 Policy use of the knowledge bases in primary education: The case of Sweden

by Ulf P. Lundgren, Director General
National Agency for Education
Sweden

Background: educational change and school reforms

The national education system in Sweden was centralised for most of this century. It was governed by the State through subsidiaries, regulations and an official National Curriculum.

Decentralisation came about on 1 January 1991. Today municipalities have the undivided responsibility of school governance. No organisational rules exist. Each municipality must manage the school system in its district so as to fulfil the demands laid out in the Education Act, the National Curriculum and in national syllabuses. Through centralised national goals and demands Government and Parliament exercise influence and control.

The 1991 reform concerned the responsibility and governing (steering) of the education system. A new system for State subsidiaries was established. This reform can be characterised as a deregulation, but it also brought a sharpening of rules and demands. The Education Act was partly changed which in turn presupposed modification of the structure and content of the national curriculum. A special committee was consequently assigned the task of preparing a new curriculum in accordance with the new system of relegating responsibility and political governing. A new curriculum for both compulsory and upper secondary education is presently being implemented.

The decentralisation and evolution of the National Curriculum was paralleled by reforms in the upper secondary school system. All study periods now last for 3 years, signifying that almost all students attend twelve years of schooling. Upper secondary school is also presently developing a system in which students may choose from a broader range of courses within the 16 national programmes and the local courses at municipalities. Tertiary educational reforms provide more opportunity for universities and colleges to establish their own entrance rules, study programmes and examinations. State economic support is increasingly linked to results and outcomes. Children may begin school at either at 6 or 7 years-old, but by 1997 the mandatory age will be 6-years-old -- a government bill is currently in preparation concerning the length of compulsory schooling. Creating private or independent schools is now possible. An independent school, if approved by the National Agency for Education, will receive economic support equivalent to 75 per cent of the average student cost from the local municipality. In accordance with the modified curriculum a new marking system has been introduced, accompanied by the development of a national testing system in response to demands for increased teacher support.

The relocation of responsibility from centre to periphery and the conversion from central governing based on subsidiaries and rules to goal and result-oriented governing incited structural changes in central administration. The National Board of Education and the Regional Boards were replaced by The National Agency for Education on 1 July 1991, responsible for national evaluation, inspection and supervision and the national development of the educational system, including a research programme.

The structural features of the school system

The public school system in Sweden entails nine years of compulsory schooling and voluntary secondary education. More than 90 per cent of students attend upper secondary schools. Compulsory school includes elementary, Lapp nomad, special (for children with impaired vision, hearing or speech) and intellectually handicapped adults schools.

The Education Act stipulates equal access to equivalent education for all children and young persons, regardless of sex, geographical location and social and economic circumstance. The Act lays down that education must "*give the pupils knowledge and skills and, in partnership with homes, promote their balanced development into responsible individuals and members of society*". Allowance must be made for pupils with special needs. Adults are entitled to education under the Educàtion Act which can take the form of municipal adult education (komvux) or adult education for intellectually handicapped adults (särvux).

The Parliament (Riksdag) and the Government define the National Curriculum for the entire school system and decide on the syllabuses for the various school subjects and courses for compulsory school. The responsibility of defining syllabuses for the various courses in upper secondary school is delegated to the National Agency for Education.

The governing board or the school-board in the municipalities defines municipal school plans and for each school unit the principal is responsible for defining the local school plán or local working plan -- a form of school-based curriculum. On each level , state, municipality and school, implementation of decisions and evaluation of results is a major responsibility. The state subsidiaries given to the municipalities is within the lump sum of state subsidiaries to municipalities. The National Agency for Education is the central administrative body and is responsible for the follow-up (national statistics), evaluation and national development of the public sector for schooling. Permission to start independent schools on the primary and lower secondary level (grade 1 to 9) is given by the Agency, and permission for upper secondary by the Government.

The Agency furnishes the Riskdag and Government with a triennial comprehensive report on the state of Swedish schooling. These reports form the basis of a governmental national development plan. The Agency also provides municipalities regularly with results of evaluation projects and compiles statistics to facilitate decision-making at the local level where comparisons between municipalities and individual schools are possible. It is also the duty of the Agency to supervise and inspect schools to ensure that the provisions of the Education Act and the rights of individual pupils are respected. There is a clear division of responsibility and accountability between on the one hand political bodies and professionals (i.e. principals and teachers) and on the other hand the institutional hierarchy (i.e. state, municipality and the individual school).

The Riksdag and the Government hold responsibility for education at the national level and the National Agency for Education for setting goals and thereby controlling results. The municipalities are responsible for distributing resources and using state subsidiaries to ensure the organisation and preconditions for achieving the national goals. School leaders and teachers are responsible for choosing the materials and methodology necessary to reach the national goals.

The earlier system for governing was built extensively on the control of inputs. The State provided subsidiaries to municipalities which covered about 50 per cent of the total running costs and were linked to teacher salaries. There was a regulated time-scheme indicating the number of lessons for each subject. Central negotiations and accords organised different categories of teachers with

different regulated teaching-times. The economic steering was built on a chain composed of three links: number of lessons, class time and teacher salary. Beside state funds for teacher salaries, there were "ear-marked" funds directed towards special needs and groups, such as economic support for special education. The 1991 decentralisation redirected state subsidiaries towards general support.

The economic support to municipalities was accompanied by rules on how and where the resources should be used: school organisation and regulations such as number of pupils per class. Changes in the construction of state subsidiaries reduced the mass of rules and produced a re-regulation or more precisely a deregulation.

The National Curriculum

The National Curriculum (*Läroplan*) is a rather extensive document which outlines the national goals and guidelines and specifies the subjects to be taught in each grade. It also includes the time schedule defining the number of lessons for each grade in each subject and a model for methodology. The period from 1962 to 1980 witnessed a change in curriculum content towards achieving specific goals and reorganising the time schedule, including the number of lessons per three-year periods. Abolishing this regulated steering system for a more goal-oriented system has implied a change in the very concept of curriculum.

The term curriculum is difficult to translate to Swedish. *Läroplan* means literary "a plan for learning or teaching". It contains the principal goals, syllabuses for the various school subjects and a plan for the number lessons are to be taught in each subject. It is composed of three parts:

a) goals for the education system and thereby an extension of the Education Act;

b) goals or objectives for each school subject; and

c) number of lessons for each grade and subject.

The Committee on Curriculum was nominated in 1991 to develop a new curriculum system for the entire school system. Its main task was to draw up proposals for a goal-based curriculum for compulsory and upper secondary schools and municipal adult education as well as a timetable and syllabuses for compulsory schools. It also sought ways to prepare children for future school activities and to strengthen teaching in Swedish and foreign languages in different types of schools. The Committee delivered its main report[1] in 1992. The proposal was sent out for public debate before a bill was presented to the Riksdag. In 1993 the Riksdag decided on the main guidelines for the new curriculum and the Government decided on the new National Curriculum.

Today the term curriculum (*Läroplan*) evokes a rather small document. Two types of goals are specified: school goals and goals to achieve. The curriculum defines what each pupil should acquire while in school and what each graduating pupil should have achieved, as well as the responsibility of teachers and principals. Each school subject has a syllabus which designates goals to strive for and goals to achieve from grade 5 to the end of compulsory school at grade 9. The upper secondary school system has the same curriculum construction as compulsory school, with goals to strive for and goals to achieve.

---

[1] SOU 1992/94: *Skola för bildning*. (A School for Life). Stockholm: Utbildningsdepartementet. 1992.

The upper secondary school system (*gymnasieskolan*) contains 16 national programmes. Two of the programmes -- Natural Science and Social Science -- focus mainly on university entrance. More vocational programmes require approximately 10 weeks of on-the-job training. Most are divided into various branches from which students may choose beginning the second year. Every subject consists of one or more parallel or supplementary courses. Each course comprises at least 30 hours study time and may be intensive. Grades are determined at the end of each course.

The curriculum is the basic steering document supplied by syllabuses. One important point is that syllabuses are continuously adjusted according to findings and results from evaluations, but the curriculum has, if not an eternal character, a more long-lasting life. Timetables are created in a special act directed towards municipalities. Timetables regulate the amount of teaching time each student is allotted. Compulsory school guarantees 6 665 hours divided into various subjects and upper secondary school 2 180 hours for academic-oriented and 2 400 hours for other programmes. A municipality can of course offer more teaching time.

The whole construction of the curriculum-governing system leaves space for professional decisions. Individual schools concretise curricula in local working plans. This means that teachers have the liberty to choose content and above all methodology. But they are consequently accountable to fulfil the demands of curricula and syllabuses. To assist principals and teachers the National Agency for Education publishes reference material, such as evaluation and school reports, and helps schools to interact by creating networks and sharing experiences. This curriculum system can be labelled a system for governing by goals and results built on the assumption that there must be space for influence on each level and partnership between levels.

State governing of education has changed from control of input to control of output. The Education Act is more precise than before and inspection and supervision of how it is maintained has amplified. The same is true for demands on evaluations on all levels. Although the governing system is not a genuinely pure goal-governed system, a timetable nevertheless exists even if it allots considerably more space to local and individual decision-making.

Assessment and evaluation

Assessments and evaluations are to be understood on two different levels. The first is the system level where evaluations are a part of the governing system. The idea is to develop new knowledge, improve the bases for decision-making and create an intellectual context for development by integrating evaluations into educational work. At the national level the National Agency for Education will triennially deliver to the Riksdag and the Government a comprehensive report on the state of Swedish education. This report also provides municipalities a bases for national comparisons. The Government evaluates the report's findings and presents a development plan for the succeeding three years. National Agency evaluations also serve as signals for inspections and supervisions and for recommendations to the Government and the Riksdag. Municipalities are responsible for the quality of individual school systems and accordingly observe and evaluate processes and results, but individual schools must nevertheless assess their own work. Evaluations employ numerous techniques of assessment, such as test-taking. The second level entails evaluating and assessing the individual student -- a domain where Sweden has a long tradition, in contrast to its inconsiderable experience in evaluating school systems. The terms "evaluation" and "assessment" are associated with individual results and are particularly linked to the marking system.

The Educational Act of 1820 already contained a regulation on marking and scales for marking. Until the educational reforms of the 1960s grading individual students was based on absolute criteria. Modifying teachers' grades was legally impossible. To support teachers and to establish grading norms, standardised testing was introduced. Students graduating from upper secondary education (*gymnasium*) were obliged to pass university entrance examinations. In this century these examinations were switched out of individual schools: university teachers conducted oral examinations at the end of the last semester which were preceded by written tests developed and distributed by the National Board of Education. With the expansion of the education system and the genesis of university selection, the marking system came under debate. During the extensive educational reform period of the 1960s and 1970s the general marking rules for entrance into higher education were accentuated. With comprehensive and integrated upper secondary education (integration of academic and vocational study schools) the marking system changed from an absolute system to a relative system. Marks were given in five grades according to the Gauss-curve (7 per cent, 24 per cent, 38 per cent, 24 per cent and 7 per cent). In order to normalise grading rules, standardised tests on Swedish, mathematics and English were distributed to schools.

The new marking system was immediately criticised and numerous commissions followed in the 1970s and 1980s to investigate it. Arguments on the 1970s centred around the idea of abolishing the marking system and introducing an non-marking school system. In 1990 a working group presented a report in which the relative marking system was proposed to be replaced by a new system related to goals. A parliamentary committee was given the task to formulate a new system. This work was linked to the work of the Curriculum Committee.

The results from the parliamentary committee were again heavily criticised and underwent modifications in the Government bill. The Riksdag developed a system which begins counting marks in grade 8 for compulsory schooling. For teacher support the National Agency for Education has been given directives to develop tests in English, Swedish and Mathematics for grade 9. These same subjects as in the earlier standardised test system are considered central to the curriculum (little more than 40 per cent of the guaranteed teaching time). Syllabuses for each subject will be accompanied by criteria for marking. Upper secondary schools will have four grades and each course will include criteria for marking. The National Agency for Education has been given directives to develop tests in Swedish, mathematics, English, French and German, but also to investigate the possibility of testing other areas (as vocational competence) and subjects. The National Agency for Education is likewise expected to develop diagnostic tests for grades 5 and 7. The grade 5 curriculum defines specific achievement goals. This is done in order to create a control station to check the level of pupils' basic skills and to form a basis for decision-making on student aid.

The elaborate assessment programme now in development will replace the standardised tests. It also includes the development of tests for use in systemic evaluations. Aggregates of test results produced for diagnosing and grading may be used as indicators of system outcome, but they must be supplied by tests oriented to specific areas of interest and designed to measure specific knowledge and skills.

The National Agency for Education

Knowledge of the structure of the National Agency for Education is necessary to understanding its role in creating a knowledge base for policy and decision-making. The Agency seeks to observe educational system developments and changes by collecting national data from which it may create a national statistic and indicator system. Evaluating the education system by

analysing how goals are achieved is the principal aim, even if a national system can never be evaluated in all its parts. Evaluation study priorities are established from government and Riksdag directives, from the outcome of follow-up programmes and from the results of other evaluation studies.

The Agency inspects and ensures that the Education Act and the New Curriculum are enforced -- rules respected and rights of individual students protected. Its pledge to the national development of the school system is two-sided. It must at once administer and refine the goals and results-oriented governing system by creating syllabuses and tools for evaluation, and at the same time develop information and knowledge as a steering device, to furnish the Riksdag, the Government, municipalities, teachers and the public with knowledge and information on education system results.

The work within the National Agency for Education is organised in two units. One central unit in Stockholm and one field organisation. These two units comprise a little more than 100 persons each. The field organisation consists of 11 working groups with a minimum of 5 persons in each. Each group is responsible for a group of municipalities. They will every year produce a report on the state of education in each municipality and will be responsible for providing municipalities with information on the national state of education. Besides stable administrative duties, work within the Agency is built on projects. Resources corresponding to 100 men per year are allocated to experts. Projects are organised within five programmes:

- follow-up statistics, indicators and tests;
- evaluation;
- national development;
- inspection and supervision; and
- research.

The production of knowledge as a base for policy-making and political steering

These reforms are intended as responses to changed social, cultural and economic demands. There is a system for life-long education in progress. Border lines between stages in the school system, and between lower and upper secondary schools are erased. The same is true of border lines between education in schools and education in working places. The changed responsibilities between state and municipalities has also sharpened the roles of politicians and the rules of professionals, such as school leaders and teachers. This also means that policy-making and decision-making are not confined to few arenas.

School reforms after World War II were formed by commissions and committees. Experts worked within these commissions and studies were carried out around central political questions. Many of these questions were formulated in such a way that they could be treated through empirical research, such as content demands on school curricula, and the effects of ability grouping. Educational research was used in educational planning - it was the focus of public debate and formed a bases for decision-making. How much influence research studies had on decision-making is more or less impossible to define. Political decision-making is born of negotiation processes, of

compromises and of developing standpoints. Research and empirical studies provide references and important viewpoints for the policy-making arena.

The knowledge base needed during the comprehensive organisational reforms and during the expansion of the school system was related to rather simple questions -- a choice between A or B. In implementing the reforms the questions became much more complex and demanded more than empirical studies. The National Board of Education developed a research programme linked to questions around reform implementation. It was also given the task to evaluate the reforms. Few evaluations were performed and critique of the central administration came from the political as well as the academic side.

The 1980s saw two major changes. First the economy changed. The public sector come under pressure to reduce and improve productivity and effectiveness. It became more and more difficult to govern. The usual model used to counter crises was no longer applicable. Various interest groups blocked decisions. Majorities in Parliament fell unstable. The governing of the public sector and the school system demanded change.

Other changes accompanied developments in production and in the labour-market. Demand for new qualifications were expressed. Unemployment rose. Immigration and societal changes focused on the role of the school system. The political landscape changed. Information technology opened up for new means of transmitting information. The school system again became the focal point. These changes called for a knowledge base which seeks explanations, provides a base for intelligent guesses, and foresees the possibilities and consequences of decisions or actions. The public demand for knowledge became more and more articulated when choice of school, study lines and subjects expanded.

This model in which school goals are given nationally and are step by step identified right down to teaching aims is a consequence of these demands. The model has two sides: goals and results. Evaluations are instruments for control (goal achievement) and sources for knowledge creation to be used nationally and locally, by teachers, students, parents, administrators and politicians. The National Agency for Education has a central role not only to provide knowledge about the educational system but also to create models and methods for local education, to co-ordinate studies, and to make knowledge accessible.

The potential problems are of course immense, such as administering comprehensive databases and making them accessible. Ontological problems necessarily arise on how to relate various studies, evaluations and research pieces. selecting results and presenting results in such a way that they can be used. Though such a broad and deep knowledge base for policy-making and decision-making has never before existed, it grows in a way which makes it difficult to handle.

Concentrating on comprehensive studies will form a clearer picture. The evaluation programme of the NEA for example contains two projects analysing the effect of curriculum reforms: one for compulsory school and the other for upper secondary school. These projects employ the national test and specific assessments. In 1993 the NEA finished a study of compulsory school. In all, 10 000 students[2] were tested in all subjects and schools were visited and questionnaires distributed to school leaders, teachers, students and parents. A specific test was developed to measure problem-solving and student ability to combine different types of knowledge. This test is being further developed and will be used in the ongoing evaluation of compulsory school. These studies form

[2] 10% of the age cohort.

models for local evaluations and provide a framework for comparisons. They are also serve as reference material for research. The status report produced triennially indicates where Parliament, the Government, municipalities, schools and the public should focus new studies and new knowledge.

The municipalities are given statistics which allow them to compare local with national data, with results from various projects reported regularly to municipalities. The development of a good statistical base is essential for the system's stability, for longitudinal studies and for registering long-time effects.

The last five years has witnessed changes in the bases for policy-making. A growing body of knowledge both now exists around local school systems and the national school system. Discussions have therefore become more "knowledge centred". Various studies nevertheless produce varying and even different results depending on the perspectives and methods applied. Different evaluation studies may form a knowledge "crisis" both in terms of volume and contradictions. But how long will these knowledge bases be legitimate? Or which one will be legitimate?

3.2 Policy use of the knowledge bases in secondary education: The case of the Netherlands

by Paul van Oijen, Head of Division
Ministry of Education, Culture and Science
The Netherlands

Introduction

The theme of the Conference is "knowledge bases". This plural form is certainly correct with regard to the three main sectors of education. There are also more knowledge bases in Dutch secondary education. A clear division exists in the school system and in the organisation of the Ministry between general secondary and vocational upper secondary education.

This paper describes the constituents of the knowledge base(s) for the whole sector of secondary education. The first and second sections give a brief overview of the secondary education sector and the actual policies. Although reading this chapter is not essential to understanding the heart of the matter, the policies reviewed indicate part of the content of the educational R&D programme based on Ministry priorities. The third and fourth sections describe the sources and composition of knowledge bases, including a policy knowledge base, a school-centred knowledge base and a knowledge base for policy action. The fifth section evaluates the use of the knowledge and previews further developments.

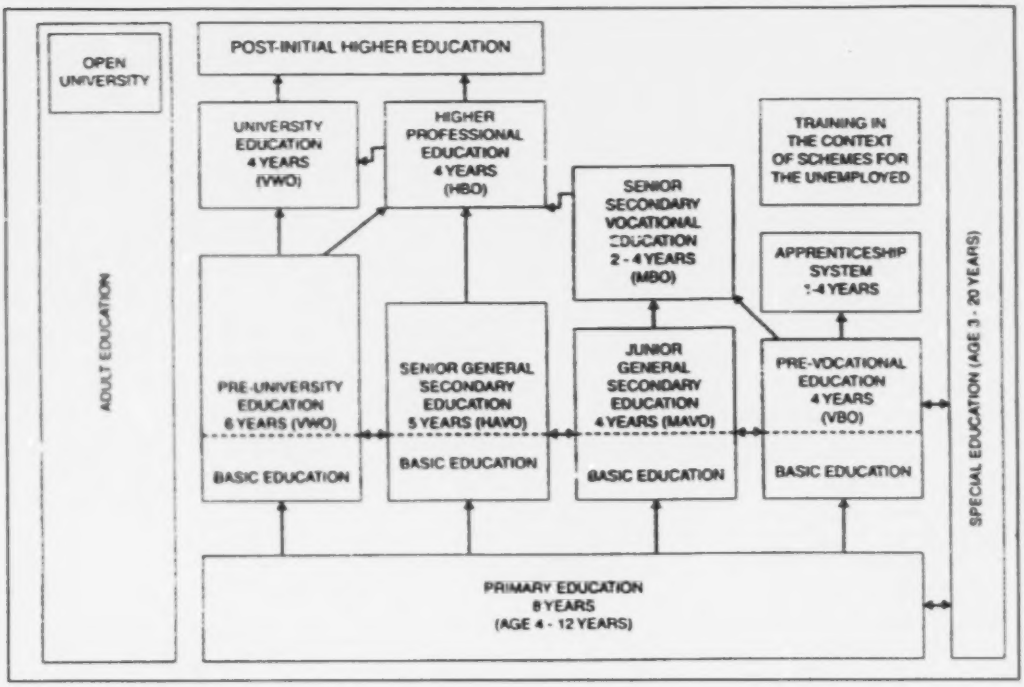
The scope of this contribution is policy biased. The author, as an employee of the Ministry, is responsible for the maintenance of the knowledge base for general secondary education. Contributions in this paper on vocational secondary education are made by Toon Jansen of the division of Analysis of the Strategy Board for Vocational and Adult Education.

Structure of the secondary education system

Primary education differs from several other countries in that it includes pre-school (children 4 and 5-years-old). Higher education is a binary system which differs from most comparable countries by the fact that more students attend higher vocational education institutions then universities. Secondary education is the most complex sector of the system. Children leaving primary education (at age 12) continue at one of the four school types in the lower part of the secondary education system (or to transition classes which delay the choice); they start with the same common curriculum -- basic education:

- pre university education (VWO, among them the gymnasium);
- senior general secondary education (HAVO);
- junior general secondary education (MAVO); and
- pre-vocational education (VBO).

This diagram of the Dutch education system outlines the multiple educational sectors


OPEN UNIVERSITY
POST-INITIAL HIGHER EDUCATION
UNIVERSITY EDUCATION 4 YEARS (VWO)
HIGHER PROFESSIONAL EDUCATION 4 YEARS (HBO)
TRAINING IN THE CONTEXT OF SCHEMES FOR THE UNEMPLOYED
SENIOR SECONDARY VOCATIONAL EDUCATION 2 - 4 YEARS (MBO)
APPRENTICESHIP SYSTEM 1-4 YEARS
ADULT EDUCATION
PRE-UNIVERSITY EDUCATION 6 YEARS (VWO)
SENIOR GENERAL SECONDARY EDUCATION 5 YEARS (HAVO)
JUNIOR GENERAL SECONDARY EDUCATION 4 YEARS (MAVO)
PRE-VOCATIONAL EDUCATION 4 YEARS (VBO)
SPECIAL EDUCATION (AGE 3 - 20 YEARS)
BASIC EDUCATION
BASIC EDUCATION
BASIC EDUCATION
BASIC EDUCATION
PRIMARY EDUCATION 8 YEARS (AGE 4 - 12 YEARS)

Senior secondary vocational education (MBO) prepares students for medium-skilled professions in the labour-market. The apprenticeship is an alternate system of working and learning which prepares students for skills recognised at a lower level. An international comparison of the upper part of MBO colleges would be the community colleges in the United States, which belong to the higher education sector.

MBO and apprenticeship are or soon will become part of Regional educational centres (ROC) for vocational and adult education, which provide short and long-term programmes in three sectors of senior vocational education (techniques, economics and administration, and healthcare), and in literacy, general adult education, orientation and transition programmes. Agricultural education is the responsibility of the Minister of Agriculture, Nature Conservation and Fisheries.

Educational policy for the secondary education sector

The constitution of the Kingdom of the Netherlands guarantees freedom of education and urges the minister to look after the quality of education.

Traditional steering instruments were basically guides to organising educational processes and included fixing lesson time-tables, evaluating teacher competencies and qualifications,

establishing preconditions for budget-spending, and overseeing central examinations. A relatively large support structure for education (curriculum development, testing, research, and counselling) operates in order to prepare and implement new educational policies. The steering of all educational sectors in the Netherlands is regulated by a national law for each sector. Parliament makes final decisions on legislation and the yearly budget. Each sector has its formal discussion arena with representative organisations of schools in the sector.

Two separate sectors of secondary education exist. The present Act on secondary education stems from 1968 and regulates all education levels between primary school and universities.

The Act, originally entitled "Mammoth", will soon apply only to lower secondary and upper general secondary education, and will be referred to here as "general secondary education". In 1986 higher vocational education became regulated in a separate Act. The new Act on vocational upper secondary and adult education was recently passed in Parliament and will come into effect as of January 1996 (the *Wet Educatie en Beroepsonderwijs: WEB*). General trends for both secondary sectors include an increase in scale (mergers between schools); heightened autonomy (lump sum, deregulations); educational upgrading (pupils remain at schools); a shift from steering on inputs towards outputs; improved responsiveness by publishing yearly reports; and the renewal of curricula structure and content.

Common topics behind policy agendas are:

- budgetary reductions (in the eighties);
- effectiveness of schools;
- efficiency of systems;
- satisfying societal and labour-market needs;
- drop-out rates;
- cultural minorities; and
- the teacher profession.

The newest phenomenon is the initiative of secondary schools to present a yearly report compiling educational performance results. These reports enable direct clients (parents, students and employers) to discuss improvements with school authorities.

Proposals for a system of quality assurance in primary and general secondary education were only recently published. Such a system has been in effect in secondary vocational schools since 1992. The proposed integral legislation would oblige every school to report annually on the proceedings, including a system of quality assurance, the output of the educational constellation, and pupil performance relative to each student's qualifications when beginning the academic year in any particular school. The intended discussions within and between schools about the main topics of the report prove to be fruitful. These reports thus have an internal (feedback, process and output) and external (promotional) goal.

Policy agenda for general secondary education

For almost twenty years political parties debated on whether to create a single comprehensive school system in lower secondary education. A compromise was reached to preserve the separate school types but introduce a common core curriculum for all pupils (12 to 14 or 15 years old) called the "basisvorming" (basic education) which consists of 15 subjects. It was put into practice in September 1993.

Last year officials agreed to renew upper general secondary education in order to improve higher education preparation. The main proposals emphasised harmonising subject profiles with school sectors in higher education and envisioning school as a "study home" where pupils are active learners. This year's proposals to improve the upper-part of VBO and MAVO are presently being debated in Parliament and deal with educational pathways with theoretical and practical orientation. A small percentage of pupils which lack learning capacities must be prepared directly for low-skill jobs.

Important institutional changes which have taken place include the merger to broad-based schools offering all four types of secondary education -- in 5 years the number of schools has been halved; the introduction of lump-sum payments (in 1996); freedom of budget-spending to procure educational support, in-service teacher training and extra-curricular activities; schools gaining authority in negotiation with teachers on salary and other labour conditions; the institution of the intra-school system of quality control operated by each school; and disseminating school information to parents to enable them to express their wishes and opinions. Recurring but still important are issues such as emancipation, international orientation, intercultural society, and safety in schools. For groups of disadvantaged pupils (cultural minorities) there exists an educational priority policy.

A new development typical of political parties is the decentralisation of responsibilities to municipalities, of which the most important are the budget, building maintenance and the co-ordination of policies for disadvantaged groups.

Policy agenda for vocational upper secondary education

The WEB (The New Act) is meant to improve the efficiency and effectiveness of the system for vocational and adult education. One of the major operations of the WEB is the development of a new qualifications structure for secondary vocational education. The main objectives are:

- to improve transparency of educational programmes, diplomas and certificates;
- to lead to vocational qualifications which are recognised in industrial branches;
- to facilitate horizontal and vertical transition through efficient learning pathways;
- to promote recognition of experiential and prior learning; and
- to diminish the early drop-out level.

The Policy Agenda for 1995-99 promises that the WEB mission will be supported by stimulating activities and by additional financial means. The mission is expressed in policy items such as improving the image of vocational education; incorporating adult education in transitional

programmes which supply vocational qualification, but also in programmes to improve socio-cultural functioning; providing job-market access to 16-year-olds regardless of their educational pathways; promoting individualised tailor-made programmes; articulating vocational training in educational programmes; accrediting training companies; preparing teachers for new tasks and responsibilities in the changed educational context; improving output rates; and including ROC as part of knowledge and regional socio-economic structures.

Analogous to decentralisation to municipalities, ROCs will hold a firm position in regional platforms and provide guidance on educational and other matters.

Summary statement on the steering of secondary education

Government policy in this decade for general and vocational secondary education fosters actively influencing the content and structure of education; changing strongly the size and number of schools; increasing school autonomy; introducing accountability and quality assurance; and shifting from steering on inputs (and processes) to outputs.

Sources of information

Important policy programmes for parts of educational sectors, such as renewing upper general secondary education, have been based on relevant research and statistics. The development of such an *ad hoc* knowledge base followed the policy initiative.

The attention for the creation of a systematic knowledge base for education as a whole or for educational sectors has grown over the last ten years. According to the Constitution, the Minister has the task to inform the Parliament on the state of education in the Netherlands. The yearly reports on the state of Dutch education can be considered the predecessors of a knowledge base, but do not merit that qualification due to lack of systematic structuring and objective sources.

The first Dutch example of an exhaustive statistical knowledge base for an educational sector was the document "Facts and figures" which was the annexe of the first integrated policy document for the sector of higher education, presented in 1988 and entitled the *Higher Education and Research Plan* (in Dutch HOOP). This example was followed by the biennial general publication *Secondary Education in Figures*.

The first attempt to formulate a policy-oriented knowledge base for an educational sector appeared in the "Evaluation report on (general) secondary education". This internal document consists of "evaluative" statistics (performance indicators), results of policy relevant research and results of Dutch inspectorate projects.

To improve the knowledge base in the sector of vocational and adult education a research and evaluation programme is published annually and a Facts and Figures Centre has been installed within the Strategy Board for vocational and adult education in the Ministry.

In 1994 the Inspectorate published an integral evaluation report on the sector of primary education (pre-primary included) which among others tasks evaluates a ten-year policy programme for the innovation of primary education. The last international report on the entire Dutch education system was the OECD review in 1989.

These examples show different sources which constitute the development of the actual systematic endeavours to built knowledge bases for educational sectors. The sources can be divided into three types: educational research and development, statistics, and "authorised" judgements. This report distinguishes national and international sources.

National sources

The principal actor in educational research in secondary education (and in primary education) is the SVO, the National Foundation for Educational Research, which commissions research to institutes, most of which are connected to universities (faculties of educational science).

The questions for policy-relevant research projects are formulated by the ministry (40 per cent of the budget, which is defined by school organisations and 20 per cent by scientists). Besides SVO the Ministry has smaller budgets to commission short-term projects. About 0.3 per cent of the national educational budget is spent on educational R&D.

Educational development in the Netherlands is separately (from research) organised in national institutes for curriculum development (SLO), educational testing (CITO) and educational advice (LPC); the CIBB is specialised in vocational education. Applications of knowledge in educational practice are mostly the result of developmental activities, not of research.

In the general report on Dutch Educational R&D the lack of coherence between the functions of research, development and educational advice is considered to be one of the weaknesses in the Dutch educational support system.

In the field of vocational education some research institutes are specialised in the relationship between education and the labour-market. The *Max Goote Kenniscentrum voor Beroepsonderwijs en Volwasseneneducatie* (MGK bve) operates as a knowledge cëntre in the field of vocational and adult education.

MGK bve conducts no empirical research, but its main goals are to provide access to national and international knowledge, to analyse this knowledge, and to stimulate the production of knowledge.

Education statistics originate from different sources. There are direct information streams from the schools to the Ministry in order to determine the budget. Most school budget are directly dependent on the number of pupils/students (the Netherlands has freedom of school choice -- when admission rules are met parents/students can choose the school they wish).

The Central Bureau for Statistics (CBS) is responsible for counting the number of pupils and teachers and for managing the budget of educational institutions. Especially in secondary education CBS has a long-standing tradition of following pupils through the educational system. Important performance indicators, such as success and drop-out ratios are based on these figures.

The national inspectorate gathers and evaluates school statistics. Authorised judgements on the state of Dutch education are also given by the Inspectorate. It traditionally decides whether or not schools operate according to the duties assigned them by law. The inspectorate has in recent years paid more attention to their evaluation task; their opinions are in principal independent from the minister and the Ministry. There are about 60 inspectors for the entire sector of secondary education (including adult education).

The General Accounting Office controls whether the Dutch ministries spend their money according to the law. In recent years the GAO has paid more attention to the effectiveness of policy programmes and stimulates the systematic evaluation of policy.

International sources

The international educational research programme with the longest tradition is the International Association for the Evaluation of Educational Achievement (IEA), which is particularly important for general secondary education subjects such as science, mathematics and comprehensive reading. OECD projects have recently gained attention and influence in policy-making. Vocational education receives more attention in the OECD programme and in projects launched by the European Union, for examples:

- the changing role of vocational and technical education (VOTEC);
- assessment and recognition of skills and competencies;
- internationai adult literacy survey (IALS);
- changing pathways and participation in VOTEC; and
- continuing vocational training survey (CVTS, a EU project).

OECD projects play a minimal role in fostering a knowledge base for general secondary education policy-making. A few Council of Europe activities have some impact.

International statistics have been gathered and published by UNESCO, the OECD, ILO and Eurostat for many years. The indicators project used for the 1995 OECD publication *Education at a Glance* largely contributed to raising awareness in policy-makers of the relatively quantitative situation of the Dutch system, compared to other OECD countries. The Dutch education system has been internationally evaluated twice by an OECD review committee.

International educational policy pays special attention to neighbouring countries. Co-operation and joint research and documentation have developed with some German Länder in recent years and for a longer period with Belgium (Flanders). Performance indicators are presently being elaborated for Dutch/Flemish secondary education systems.

Summary statement on sources of information

It is typical of educational policy and of Dutch policy in general to create an institutionalised support structure for primary processes (examples in other fields are the agricultural sector and the health care system).

For each of the types of knowledge in education (statistics, research, development, advice, and judgement) there are institutions operating on a national scale. The Netherlands is active in participating in international activities. Except for a few no specialised institutions seek to compile a knowledge base for secondary education as a whole. Most institutions operate for education as a whole, for primary and secondary education (and teacher training) or for vocational and adult

education. There are also no institutions on a national scale specialised in one or more subjects of the curriculum.

The actual knowledge base

There is more knowledge available than can be applied in policy-making. The main problem is lack of coherence. In recent years attempts have been made to structure policy-relevant knowledge of education. The former government made a decisive step in encouraging each ministry to invest in a policy evaluation programme and to monitor the sectors in society they govern. Two other knowledge bases cluster around the functioning of schools, and a less structured knowledge domain around the effectiveness of policy strategy and actions.

Policy-oriented knowledge base

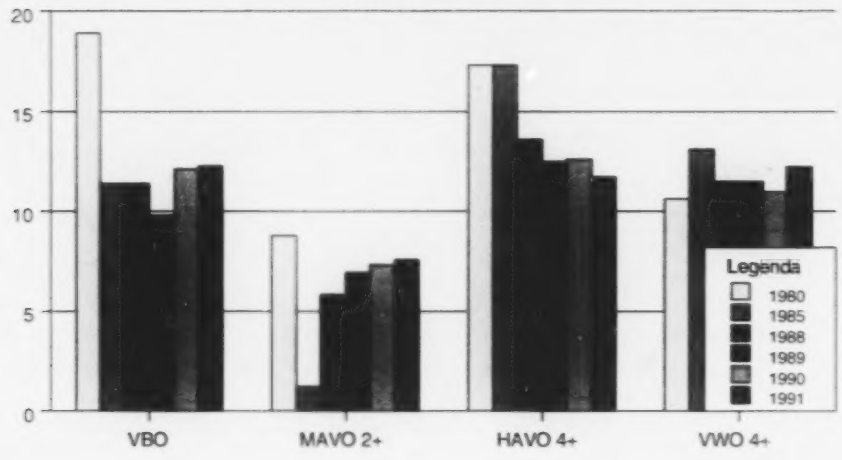
The following table outlines the structure the evaluation programme (the origin of the knowledge base) for secondary education policy-making.

Three levels		**Statistics**	**R&D**	**Judgement**
secondary education as a system	monitoring indicators	x		x
major policy operations	monitoring evaluation programmes	x	x	x
policy topics and aspects	evaluation projects	(x)	x	(x)

Statistical monitoring of objects and processes is considered the system's forte, by surveying the number and characteristics of pupils, schools, teaching staff; pupil enrolment, transfer, destination, performance; cultural minorities (first and second generation) performance; and the characteristics of schools.

The OECD's *Education at a Glance* has in recent years completed the statistical picture, followed by a biannual statistical report on general secondary education containing a number of indicators, such as enrolment in the four different types of secondary schools, numbers of graduates in the four types, drop-out percentage, effectiveness (success rate), efficiency (success rate including length of school career), choices of school-leavers to further schooling, and success rate in first year of next school career. Results on final general examinations generate several indicators on the performance per subject. The following graph shows an important performance indicator on drop-out rates.

Drop-out as percentage of total of school-leavers for each type of general secondary school



Source: Central Bureau of Statistics.

General secondary education policy objectives are often situated in the next educational sector. For vocational education the first experiences of the school-leavers on the labour-market is important -- important objectives must therefore be monitored beyond the sector.

Most of the effort and money to monitor and evaluate major policy operations is given to longitudinal cohort studies: samples of about 20 000 pupils followed through their educational careers and entry into the labour-market, and the development of tests measuring whether pupils meet standards of the common curriculum in lower secondary education.

Educational research does not play an important role in the evaluation of the system as a whole, but is essential to innovation and for the qualitative evaluation of separate educational policies. Education innovation in different subjects is more inspired by the development activities and expertise of subject specialists than by research -- an important exception is research on mathematics (where R&D and consultation are integrated in one institute).

Important policy programmes such as the educational priority policy for cultural minorities are evaluated by researchers. Cohort studies to evaluate educational innovations of parts of sectors are co-productions of the national statistical agency and research institutes. Research on specific policy topics include personnel conditions, financing procedures, violence in schools, and position of females. Some knowledge fields are considered important for strategic medium and long-term policy-making:

- demographic trends;
- internationalisation;

- technological developments, information technology;

- changes in economy and the labour-market;

- social and cultural trends in society; and

- developments in the conceptions of government steering.

Although such knowledge is considered important, recent years have shown few new insights, probably because changes in these areas require a five-year maturation period (with the exception of the labour-market). A "school panel" was created 2 years ago to gather factual descriptions of situations and processes in education -- these schools answer questionnaires twice a year.

Since 1994 the Inspectorate's main contribution to the knowledge base has been the yearly "State of education" report presented to the Dutch Parliament. For the first time this year the report includes results of scientific research on education. It also contains inspectorate findings on specific evaluation projects. Some examples in the 1994 report include counselling of beginning teachers, subject transport logistics, cancellation of lessons in general secondary education, educational priority policy, terms of application for teachers in vocational education, contract activities of schools, management of educational information technology, emancipation of women, and development in the system of quality assurance. The methodology for the evaluations reflects the traditional control task. A norm is derived from the law or constructed by the inspection and schools are compared to that norm.

School-centred knowledge base

Individual schools are the elements of the school-centred knowledge base. From the perspective of policy the school-centred knowledge base is a picture of the characteristics of the combined schools and types of schools (the majority is part of combined schools). Besides school financing, information is also available on school performance and includes number of graduates, drop-outs rates, transfers, and performance on general examinations.

The Ministry does not communicate with individual schools on their performance, this is the task of the inspectorate, and it is not interested in the publication of league tables of schools, which mainly reflect pupil characteristics. Each year the Inspectorate gives schools their performance figures compared to the national mean of the same type of schools.

An important link between the general knowledge base and the school-centred knowledge base is the research on school effectiveness. Of growing importance is the school-centred knowledge base from the school perspective. For vocational secondary education schools already have instruments to assess their own quality in order to improve school policies. Instruments for primary and general secondary schools will be developed. Schools have repeatedly stated their need to have access to standards and averages of comparable groups of schools. Several monitoring activities not only contribute to the national knowledge base but schools receive feedback on the relative position of their institution compared to the national mean or the mean of a relevant group of comparable schools. Information varies from examination results and labour-market position of school-leavers to teacher illness and quality of enrolment. School-leaver surveys are widespread among vocational schools in order to monitor the effects of their instruction on the labour-market.

As in higher education, the institutions for vocational secondary education have become more responsible for innovations, although there are two R&D educational support institutions in this field: CIBB for vocational education and for adult education. Under the New Act (WEB) they will be integrated in one institution the CINOP. Schools for general secondary education receive funds for the innovation of their educational practice.

For teachers in secondary schools, the primary need for knowledge deals with the subject of instruction. Such knowledge bases are less structured, for general subjects most research investments is done in mathematics and in Dutch. The development of pupil monitoring systems is more advanced in primary education and has only recently emerged in secondary education.

Policy strategy and actions

Although the science of public administration has become popular at Dutch universities in the last decade, there is no recognisable knowledge base for executing educational policy activities. Policy development and operation is either connected to tradition in parliament, to legislation and historical relationships between schools and the Ministry, or new ministers and state secretaries set their personal goals on policy strategies and logistics.

The blueprint for the future school system presented in national discussions resembled old policy strategy. The large-scale experimental innovations instated afterwards were evaluated and debated in order to optimise their implementation on a national level. Today based on suggestions from the educational community (including R&D) or political ideas, the Ministry proposes general ideas which are critiqued and then installs a committee of experts to advise on a innovation. Debate incited by this advice leads to more policy precise statements which may become legislative proposals to Parliament. Implementation is no longer directly steered by government but by national processing management organisations independent of the Ministry, but which have direct contact with political authorities. Some of these advisory committees are also inventors of important didactical concepts such as the "TVS" principle of Application-Capability-Coherence (for the 15 subjects of the common curriculum) and the (general upper secondary) school as a study home (or by analogy the ROC as a study workshop). Implementation of the common curriculum is also monitored by the processing management organisation. An important part of implementation work has always been the task of the educational support structure responsible for the D of educational R&D and for advice and specific training.

A recent marketing strategy for policy has emerged. The school-panel also consists of groups of directors and teachers. Key aspects of proposals on important new policies are presented to these panels in order to gather opinions in the field. Decentralisation of policy implies expanding the influence of other actors. In vocational secondary education, employers and regional authorities have a more important role. Proposals are sent to Parliament to enlarge the tasks of municipalities and the influence of parents and pupils who are the direct clients of secondary education.

A policy knowledge base has to be organised and maintained by an internal organisation in the Ministry. An important operational finding of the study of the relationship between (social) research and policy-making indicates that improvements are possible through the policy system and its capacity to handle and store knowledge. Since 1992 the Ministry of education has sought to built such a facility. Each strategy board for a educational sector received a division for analysis responsible for the information (statistics, research, studies) of the sector, as well as for the ministerial knowledge bases. Their tasks range from simple statistical analyses, formulating research priorities

and commissioning research, analysing results of research and Inspectorate activities to producing integral statistical reports on sectors and summarising the state of the knowledge relevant for policy-making. In the framework of actual discussions to (re)organise the Ministry, the advantages and disadvantages of centralising evaluation and monitoring functions are a topic.

Summary statement on the actual knowledge base

Statistical and research knowledge bases for policy-making are formulated in periodical documents. Procedures exist to inform schools on their relative position in a (quantitative) school-centred knowledge base. A coherent knowledge base for policy action does not exist. Instruments and organisational devices for implementation and marketing of policies are in use. Whether these knowledge bases are truly informative about schools and education improvement can be tested by questioning the state of education.

The use of the knowledge base and future needs

Patterns of use by government

The role of scientific and other knowledge has changed over time. In the past ministerial personnel consisted of lawyers, some economists and administrators. The Inspectorate was the usual arena for the creation of new ideas. In the 1960s when pedagogical sciences arose, the traditional pattern of science-driven innovation emerged: academic knowledge, policy advice, policy blueprints, experiments, evaluation, decision-making, and legislation. This was soon followed by a weakly structured policy-driven research agenda. Until the late 1980s statistical information came to the Ministry by financing separately detailed expenses of schools (control on input). International information was received and generated by some specialists and had no widespread influence.

The actual pattern of use of available knowledge is partly changed. The (policy) research agenda is more firmly structured around major policies and cohort studies, combining broad surveys and in-depth analyses. The use (or non-use) of scientific research has not really changed in itself but more competing sources have arisen. The Inspectorate became a more important source of evaluative information. As a result of its methodology, discussion emerged on the responsibility of formulating norms and criteria. Although the statistical monitoring of input and throughput information became less detailed, the handling of statistics became more integrated, sophisticated and presented into managerial form. Other ways of financing (lump sum) and defining educational tasks (new legislation in vocational education) will further diminish input and processing information. The loss of faith in the problem-solving capacity of government itself helped to legitimate the role of policy evaluation. More systematic monitoring of (intermediate) results of major policies, establishing agreements with institutions and evaluating goal attainments are normal procedures. The dominant function of knowledge gained by monitoring and evaluation is not the invention of new policies but the reconsideration and moderation of ideas and claims of interest groups, based on a general knowledge of the sector. It is in the interest of policy-makers that schools and teachers optimise their use of valuable information. Until now most of the use teachers make of new didactical findings is the result of (scientific) development. Some general research findings have direct application. The best recent example is research on the amount of violence in secondary schools and factors that influence these events. School use of information on their own relative position and performance is increasing.

Increasing international research and compiling of statistics have a comparable function for countries. They provide information on standards and the relative position of the national system: the OECD INES indicators project is an example of a more sophisticated and managerial presentation of information. The following portrait of Dutch secondary education emerged from international sources:

Strengths	enough teaching and learning time; cost efficiency on a yearly basis; IEA-quality pupils; performance oriented schools;
Weaknesses	work overload for teachers; lengthy school careers; high selectivity; number of pupils in special education; drop-out rates;
Typical	early streaming of pupils; big institutions; influence of parents;

From the Dutch secondary education policy perspective indicators must be improved for:

- differences between general and vocational upper secondary education;
- more frequent and simple comparisons of level;
- comparison of qualification structures;
- curriculum indicators: opportunities to learn;
- comparison of success and drop-out ratios;
- attention to groups with special needs; and
- attention to adult education.

The last OECD country review raised policy issues which stayed on the policy agenda for several years. Attention to more qualitative research projects of the OECD is much higher in vocational than in general secondary education. Tradition aside (OECD focus on the relationship between education and the economy) it is mainly a question of the (lack of) involvement of policy-makers and definition of themes: lack of coherence between national policy domains and the broader domains of projects in OECD programmes, such as school choice or the relationship between general and special education.

Steering and future developments

The future development of knowledge bases will be influenced by different ways of steering and governing at a distance. The following main trends seem to be influential.

Decentralisation

The present government decentralises several budgetary and other responsibilities to municipalities. Decentralisation to schools already began some years ago. Attempts to improve relations between vocational education and the labour-market lead to regionalisation: firms and labour organisations in the region communicate and co-operate more intensively with educational institutions.

Schools as learning organisations

A recent policy paper with this title was published expressing the national policy on quality assurance in education. Schools (primary and general secondary) are considered the main responsible actors for assuring and improving quality, and the active consumer of information.

Client centred approach

One of the changes in Dutch educational policy strategy is a shift from government steering of schools to increasing the influence and role of parents by giving them access to information about the performance of their childrens' schools. An important medium is a validated quality document for each school. Parents also receive a guide with their rights and duties.

Information processing

The introduction of information technology in education has not shown remarkable modifications in teaching processes. Other types of changes probably will have more effect on steering.

- In a few years all pupils will have their own educational identification numbers. Schools will not be paid based on numbers of pupils but on the reporting of (depersonalised) individual applicants. This education number will lead to the introduction of a national pupil databank storing the educational career information of each Dutch pupil. The essence of cohort studies is available for the whole population.

- The recent implementation of an electronic highway for the institutions of vocational education has commenced. Information exchange between institutions, along with government and producers of educational relevant information, will be intensified.

- Plans for item-banking educational measurement in general and vocational secondary education are developed. For instance the testing of attainment targets of 15 subjects in the common curriculum is an example of schools and teachers deciding when their pupils should pass these tests, with results reported back.

Accountability of international activities

As the functioning and efficiency of educational research for national goals has been questioned, the same will happen with international research activities. The unique position of the OECD will allow it at least in Europe to meet the competition with the European Union which has

recently started a programme on educational research. The monopoly of the IEA could come to an end. These changes in steering and in steering instruments may lead to the following developments for knowledge bases in the near future.

From an evaluative state to a learning society

The state will not withdraw to a passive role as evaluator of autonomous institutions. The functioning of a coherent national educational system presupposes a common body of knowledge. The state plays the role of organising knowledge, where schools, consumers (parents, pupils, employers) contribute and extract information.

From a policy knowledge base to a multilevel knowledge base

Knowledge bases must be designed for multiple uses at multiple levels. This can be done more easily with statistical knowledge bases providing entrance, transfer and school-leaver figures for the system as a whole and for individual or groups of schools. National item-banking and storing of results supplies the same opportunity for parts of pupil learning results. A knowledge base of research information needs much more investment in knowledge surveys to strengthen the coherence of knowledge and to derive applications for transfer to local situations. The actual organisation of the Dutch support structure (separation of "R" and "D") could be a handicap (though there are other advantages).

Schools as part of the local and regional knowledge infrastructure

Localisation of policy especially for cultural minorities and other disadvantaged groups aims to develop an integrated youth policy. Schools, as part of a youth policy chain tailored to the needs of local situations, will need more information on the situation of pupils outside schools and will have to contribute information to youth-supporting institutions outside schools. Regional educational centres (ROC), which offer a wide range of educational programmes leading to vocational qualifications, also have a function in the knowledge infrastructure of small and medium-sized enterprises (SME). They may function as a gateway of innovative knowledge through delivery of up-to-date qualified personnel and through offering tailor-made training programmes for employees of companies. ROCs and the position of ROCs in the SME-knowledge structure are still in the developmental stage.

Improving the international knowledge base

Statistical indicators do not have to increase in number but must be specified in order to fit policy steering domains (differentiation between general and vocational education). The concentration on output steering can be reflected in the choice of indicators. Comparing an OECD-CERI programme of 1985 with 1995 shows several comparable themes. What is lacking is the investment in trend reports on gathered knowledge for certain domains for example. Co-ordinating several national research agendas in an international context is a complex task which should begin on a manageable scale. For Dutch (secondary) education, international policy for co-operation with neighbouring countries is a good starting point, especially if the educational systems resemble each other.

3.3 Policy use of the knowledge bases in tertiary education: An overview

by Maurice Kogan, Professor
Centre for the Evaluation of Public Policy and Practice
Brunel University, United Kingdom

Why tertiary education is different

Higher education differs in its content and in its organisational characteristics from other phases of education. Whilst it shares some of the knowledge base needed for compulsory education, it has its own distinctive requirements. The main differences are that compulsory education is to a large extent bounded by social expectations which may find expression in law and regulation as to its conduct and content. There is now hardly a country in which the competent authorities do not lay down a common curriculum for the schools.

A higher education curriculum may be authorised in some countries by national authorities but even then it is a creation of the "guild of professors", acting on behalf of the state. In most systems it is in reality the product of individual teachers who, at most, seek authorisation from their own immediate colleague for inclusion of their syllabuses in the agreed curricula for courses; whilst the objectives of schooling are to some extent contestable, there is general consensus about them.

Higher education's purposes and mandates are multiple and are under constant pressure for change as its scale and client groups change. The very definition of higher education has become uncertain; even though schools have multiple tasks, such as teaching and learning, and pastoral, caring and community functions, these are incorporated in one structure. By contrast, each of the tasks in higher education -- research, scholarship, teaching, consultancy and community functions -- calls for different forms of knowledge and different forms of sponsorship and institutional organisation. The multiplicity of function is reflected in the larger size of higher education institutions and their complex organisation; all educational institutions are susceptible to influences/challenges from the outside world, particularly the economy. Higher education has particularly strong demands on it in terms of making its teaching, research and development, and screening activities relevant to the needs of society and the economy.

Schools are largely hierarchical institutions. Higher education institutions are deemed to be run by combinations of hierarchical management and professional collegian, although management controls have become stronger. Until recently higher education has been evaluated mainly by peer review. Though still the dominant mode it is now open to external review and assessment for content, quality, outcome and process. In this way it is being drawn closer to schools; the steering of compulsory education has always been unequivocally under the state. Higher education has in many countries been allowed considerable freedom to steer itself, although degrees of state control have varied enormously and in many systems are undergoing radical changes now.

Most of these points apply to higher education as dominantly provided by universities in which both research and scholarship as well as teaching and learning take place. In some of the largest systems (United States and Japan) however, higher education is taken to include teaching and learning beyond the compulsory schools stage in institutions that would be defined as further education and/or training, or upper secondary schooling, in other systems. For the most part, these

differences account for the fact that R&D is undertaken by groups researching separately into tertiary education and into schools and often work within separate systems of sponsorship.

Policies for the sector

Higher education policies have undergone radical changes in some countries, though not always in the same direction. First, higher education has expanded greatly in most countries with the result that it no longer caters wholly for an elite but provides either mass or universal higher education. The tasks set for it have become more complex and numerous to provide for these wider client groups and the changing needs of the economy and society. Second, whilst the social composition of the student body remains mostly unchanged, in many systems there is almost parity of entry numbers between men and women and a great increase in the numbers of older students and those studying part-time. Third, the expansion of higher education and the need to regularise and enhance advanced vocational education have led to the creation of binary systems, some of which have been later reconstituted to make a larger unitary university system.

Fourth, those countries whose decision making has been conveyed through detailed regulations, controls and detailed financial controls have tended to become more decentralised and to replace controls by normative controls exercised through evaluation and monitoring. Those systems where controls have been relatively relaxed, notably the anglophone countries, have tended to increase central and legal powers. Fifth, in some countries, academic inputs to policy-making have been partly replaced, complemented or challenged by influences coming from business or industry and/or by the combination of education with training at the ministry levels. Sixth, those countries which have financed higher education through deficiency funding now require institutions to seek some of their own funding through acting in the market for students and research money, and to compete with each other for more limited funds.

Seventh, almost everywhere the units of resource have been reduced as student numbers rise and as governments encounter economic difficulties. Eighth, governments now insist that institutions display efficiency, through the creation of stronger managerial systems, through the imposition of outcome measurement as part of evaluative procedures and through creating their own efficiency arrangements. Ninth, in many systems there is an attempt to change the teaching agenda by reducing the numbers entering public rather than private sector employment, and by inducing employable and enterprise skills.

Tenth, the organisation of the curriculum and study period is undergoing change to increase greater flexibility through modularisation and attacks on the time taken to complete degrees. Eleventh, in many systems there is an attempt to change the research agenda to direct it towards projects that are seen as likely to enhance economic performance.

Twelfth, there are epistemic shifts affecting the generation and legitimation of knowledge. Challenges to the authority of disciplinary-based knowledge have been lodged by the sociology of knowledge from the 1960s onwards; these have since been accentuated by successive waves of critical theory in the form of hermeneutics, post-modernists and other deconstructivist tendencies. These have affected academic authority. At the same time legitimacy has been increasingly extended to non-disciplinary originated subjects which emanate from domains of concern or social problems and tasks. There has also been an absolute explosion of both the content of knowledge and ways of managing and communicating it.

Whatever the factors causing or influencing these changes - economic stress and demands of the economy -- ideological shifts about the desirable purposes of higher education -- changes in concepts about the relationship between the state and public institutions in general -- it is plain that policies have created entirely different concepts, styles and structures in tertiary education from those obtained at the time when it was concerned largely with the production of an elite and dominantly with the production of knowledge that was mainly concerned with the advancement of theory or other forms of scholarly production. The traditional forms of research, scholarship and teaching still retain eminence in esteem and resources, but higher education is now conceptualised as multiple in functions, in professions, in client groups, in styles, in reference groups and in systems of control, management and governance. It follows that the knowledge relevant to running and developing higher education will be multiple in content, use, and ownership.

The knowledge required

These changing characteristics affect the nature of the knowledge required for the development and evaluation of higher education in its many manifestations:

- for systemic policy-making and management;
- for institutional policy-making and management;
- for relationships between higher education and the needs of society and the economy;
- for the evaluation and monitoring of its different functions; and
- for development of its main functions: teaching-learning, research and scholarship, consultancy and community functions.

In moving to consider what will be the relevant sources of information for each of these purposes and levels, it is possible to think in terms of a matrix which will show (a) the problem area in each system level to be illuminated by knowledge; and (b) the kind of knowledge needed and its likely source.

For the most part policy-making and management will require knowledge at the systems and institutional levels. At the same time knowledge of what is important at the working level should be encouraged and obtained. For example, both conceptual and empirical enquiry into the nature of learning is essential if governments are to pursue successfully their attempts to encourage the inculcation of transferable and employable skills. Selectivity in research funding will fail if there is not further study (important researches have already been conducted on these issues, e.g. Pearson *et al.*, 1990; Kyvik, 1991; Johnston *et al.*, 1993) into the factors making research productive.

The following section travels through the different sector levels -- international, national, institutional and professional-individual -- in an attempt to identify problems, the nature of the knowledge that might contribute to their elucidation, and the sources of such knowledge.

Knowledge about and for the system

Locating higher education within the international scene

At the general level of concern, systems are bound to concern themselves with the international higher education scene. Indeed, it is likely that they already do so, to judge by the degree of convergence observable between national systems, some of which must be attributable to imitation. There are many areas where research can fruitfully be conducted comparatively between researchers from different countries. Work undertaken in one country can illuminate work undertaken elsewhere. Much of the most fruitful co-operation and interchange arises spontaneously from the fact that research in principle has no international boundaries. Many international research associations in educational R&D already promote the exchange of knowledge, and individuals communicate and increasingly work with each other; this has been identified as a key variable in productive research (quoted in Kyvik, 1991).

Bodies such as the OECD help countries to exploit research findings as a contribution to policy analysis, and in circulating knowledge and ideas help to set the agenda for future research. They provide common forums for problem identification. The OECD country reviews are acknowledged as a major source of information and insights into how different systems work. Such development of thematic reviews will enhance comparative knowledge of higher education. As the European Union increasingly addresses educational issues, it should seek help from an empirical knowledge base. Establishing and helping to enlarge a comparative knowledge for educational policy-making may then be among the tasks faced by international organisations.

A report to be presented to ministers in early 1996 suggests that it would be possible to strengthen international R&D dimensions in education and training by creating an international market for R&D; by establishing international bidding procedures so that the best equipped researchers, from whatever country, are appointed -- this would also enhance the dissemination of knowledge and skills; by looking for other forms of international collaboration, particularly when the subject of research would be advanced by comparative perspectives; by pooling resources wherever this will be beneficial; by establishing common forums for problem identification; by creating the presumption that all researchers will gain at least reading familiarity with one or more foreign language; by establishing an international knowledge base through networking, conferences, shared projects and shared training events for younger researchers (a good example has already been set by the Consortium of Higher Education Researchers); and by engaging the interest and sponsorship of multi-national firms and of organisations that have an interest in generating flexible work forces capable of working in more than one country and of refreshing their knowledge and skills resource as employment and social institutions change over time.

Of a more directly instrumental interest, it is important politically for systems to know how they compare in expenditure on higher education; in human resources expended -- staffing policies are largely neglected nationally, and should become of concern as international academic labour markets grow, and as the changing portfolio of higher education requires redefinition of appropriate staff preparation (Kogan *et al.*, 1994); in access rates, differentiated between social class, age, sex and part-full-time recruitment patterns; in outcomes of trained graduates; and in research and development outcomes.

It follows that national statistics and other data should be collected in forms making international comparisons possible. The principal source of statistical data must be the national authorities which must rely on the data provided, *pro forma*, by institutions or by other parties

involved such as employers. Data quality varies greatly between countries: in some, for example, there are a large number of long duration "inactive" students who both inflate the access figures and distort, for planning purposes, the allocation of places and resources to institutions. Some institutions do not know how many students are on their books.

Whilst data of this kind must be "hard", it is important that data should be produced on the quality and processes of the education offered in different countries, particularly as free access between countries becomes more common. Such data are best created by adequately funded independent researchers who could, however, also exploit the judgmental data created by official evaluations.

National knowledge requirements

All of the data useful for international comparisons are needed *a fortiori* by national policy-makers in planning what should be provided and in evaluating the effects of their programmes:

i) Policy-makers need well-founded perspectives on the changing nature of educational populations, their size, their socio-economic and ethnic make-up, and the state of the economy as it both nourishes the educational system and expects contributions from it.

ii) They need insights into the educational wants as presented by the multiple stakeholders. These can be converted into a needs analysis. This may require a quantitative frame stating demographic developments, economic projections and forecasts of demand. At the same time, the needs analysis should be conditioned by "softer" data which incorporate analyses of shifts in stakeholder demands for different services, and feedback from users which gives some idea of the impact of policy.

iii) They need accounts of the range of patterns of organisation as they support or control educational practice, and the other higher education functions. Many national authorities are required to specify or give guidance to institutions on internal governance as they release central controls and expect stronger institutional management. There are several dimensions of such studies which could affect thinking about statutory provisions for the governance of institutions:

- the compositions and powers of governing bodies -- Do they include lay (i.e. external non-academic) representation?
- the relationships between senates and other governing bodies and rectors (the issue of management is becoming acute as all countries seek to induce stronger efficiency in decision-making, and many delegate powers to the institutions from the centre);
- the relationships between deans, heads of departments and individual academics -- Managerial or collegial?; and
- the interface between academic leadership and non-academic administrators.

iv) They need the evaluation of the impacts of policies. Have they changed the higher education agenda in teaching and disciplined enquiry? Have they affected epistemic identities (Henkel, 1995)?

v) They need the costs and benefits of different policies. What has been the cost of reform? *Cui bono*?

vi) They need a picture of what is working or what might work in education -- "What kinds of curricular, organisational patterns and differential applications of resources might affect the propensity of higher education educational systems, institutions and practitioners to work more effectively?" -- is an example of a legitimate question to which answers are needed.

vii) They need information on the demands on the system in lieu of the information derived from pricing mechanisms. Educational research can provide information about changing clients' needs and wants, and the extent to which they perceive that education is meeting them.

It is in area (vi) that policy-makers feel the strongest lack in the knowledge base provided them (OECD, 1993). Hypotheses for further research may be derived from single case studies conducted in the field of education, but firm propositions, let alone scientific principles or laws, cannot be derived in this way. Meta-evidence emanating from many studies and research replicated over time, under different conditions and employing different designs and methods, is required in establishing propositions and principles for policy and practice. For the most part, however, educational research does not seek to establish such higher-order knowledge and it has been criticised as being either time and place-specific, or so general as to be banal.

While research can have instrumental effects, directly influencing decisions, more often it serves to shape policy-maker perceptions and agendas, as in Carol Weiss' notion of enlightenment (Weiss, 1980). Meta analysis can lead to "short order" analyses which might contribute to immediate policy concerns as well as give pointers for worthwhile further studies.

Political needs

Social science research may have political and expressive functions. It is important for politicians and policy-makers to demonstrate a democratic belief in the critical testing of ideas and of the policies and practices that they create and that they are responsive to political, cultural and social movements. Creative policy-making requires the testing of accepted wisdom and refreshed concepts.

What kinds of knowledge, and who to produce it?

It will be seen that several types of knowledge are required by national authorities. Quantitative hard data are necessary to give dimension to the analysis of present and future policies. Such data are often, rightly, a derivative of transactions between government and institutions.

Reference has already been made to the importance of contributing to and making use of international statistics. In some countries statistics about the detailed functioning of institution, or even departments, are collated and published by government. For example, the UK's Universities Statistics Records provides an impressive set of data of considerable use to both systems and institutional managers.

It should be noted, however, that many data sets which have caused policy change have emanated from independent research groups, for example data demonstrating social class differences in **"Take-up"** although these may have been taken over for more continuous and systematic treatment by government. Other data may be inspired by governmental requirements to evaluate performance. The quality of teaching and research has come into the public domain. But it is generally true that even summative evaluations are not fed into needs analysis or into policy planning but are left as part of corrective mechanisms in institutions or affect, in a minority of countries, differential allocations of resources.

OECD reviews have, in the past, been noted as feeding only inadequately into policy formation, but steps have now been taken to redress this deficiency (Kogan, 1979). There is thus an enormous potential knowledge gathering agenda for those who run systems of higher education. The quality and sophistication of the data now available vary greatly. Some countries can use the data, as can institutions, for policy critique and change. In others, they are not at first base.

The role of independent R&D

The role of independent R&D in systems policy-making and management is far more problematic. Researchers can certainly apply research techniques to evaluative studies. They are less certain about their ability to demonstrate to government what works best. Their key function is to raise issues and questions and to test from an independent standpoint received policy and practice wisdom.

Teichler (Teichler, 1993) has observed how research in higher education has passed from concentration on national cases to more general reflection on the deeper nature of higher education but also to analysing the problems faced by systems and the implementation of policies. There has also been a flow of independent research which makes it possible to examine higher education comparatively and critically and in terms of what is known about the theory of public institutions.

What follows is an arbitrarily selected list[3] of potential and actual research areas suited to independent research which should be useful to national policy-making. By independent is meant that researchers decide both its objectives and methods, although government sponsors would be among those with whom they negotiate on objectives. It is intended to demonstrate the range of subjects and disciplines involved rather than provide a comprehensive inventory. That should be a task for each national authority and its academic community.

- Changes of structure and organisation at both the system and at the institutional level. Empirical studies across countries could challenge the validity of much existing theoretical work on structure process and organisation. These take as their starting point the assumption, based on the diverse and specialised nature of the knowledge required at the productive base, that the knowledge business requires particular forms of organisation, integration and modes of change. These largely assume the necessity of freedom from managerial control if good quality enquiry is to be encouraged (e.g. Clark 1983; Becher and Kogan, 1992). This assumption is, however, being tested by attempts

[3] This list is a developed version of one contained in a paper published by the Gulbenkian Foundation. It was also delivered at the EAIR Conference in Turku, 1993 and at an OECD/EU Conference in Constantisti, Romania in May 1994.

to make higher education more efficient and more concerned with the measurement of outcomes for which institutions and academics can be held accountable.

- Evaluation of the effects of "managerialism" on the objectives, quality and social relationships of academic work could form the subject of one area of work. It would depend largely on concepts drawn from the sociology of organisations. A parallel issue would be the changes in the balance of power between academics, managers and lay trustees or governors -- an issue for political scientists.

- Results of the abolition or the consolidation of the binary line, its evaluation drawing on theories of knowledge and curriculum studies (does content change with structure?), sociology (on patterns of access and on the changing nature of the academic profession), organisation theory and political science (on emerging patterns of governance).

- Changes in governmental structures and steering mechanisms. They have changed greatly in most EC countries over the last decade. Among the phenomena noted have been greater centralisation and prescription in the hitherto least governed systems (such as those in the United Kingdom) and attempts to devolve power to institutions in those countries where central control has hitherto been tightest (e.g. Sweden and Finland). Financial and legal controls which now exist could be compared not only in terms of their mechanisms and assumptions but also in terms of their impacts on the behaviour of higher education institutions.

- The nature and impact of the changing EC role. This could be assessed in terms of its influence on both national policies and institutional identities and working as well as increasing convergence between different national characteristics.

- Quality assessment and evaluation of higher education is a particularly rich seam for study both for its theoretical and practical managerial and professional consequences. It could be pursued at several levels. Evaluation generates particular forms of knowledge which vary according to the purposes for which it is sought, the techniques used and the potential owners of it. Its concerns stretch from political science and organisation theory to the theory and practice of measurement. Studies of its impacts would draw on psychology, curriculum analysis and applied economics. It is linked with major changes in the way in which government controls public institutions, the changes from *ex post* to *ex ante* evaluation, the supersession of input and process analysis by outcomes measurement, and the creation of a whole organisational team of evaluators, quality busy-bodies, inspectors, auditors and consultants (Henkel, 1992).

- Theories of knowledge, curriculum and learning range widely across the disciplines. Theories of knowledge may start with questions of epistemology (the rules that govern knowledge), but they also help clarify aspects of science policy, including the institutional characteristics of the scientific and academic community (see especially the work of Bloor, 1976; Mulkay, 1979; Whitley, 1984). At the same time they feed into the study of the nature of disciplines (Biglan, 1973; Becher, 1989), which in turn illuminates inquiries into the curriculum and teaching in higher education. Learning research is closely related, much of it deriving in methodological terms from the field of psychology, and concerns such questions as the extent to which learning is "deep" or "surface" (see the work of Entwistle and Marton).

This area of work has important practical implications for the practice of higher education. For example, many governments are attempting to influence the purposes and practice of high education. They want studies to be more relevant to the world of work. This raises the issue of how far the curriculum is and should be determined by the imperatives of academic disciplines. There is a lot of research now addressing the question of the organisation of the curriculum -- how far it is limited by disciplinary or practical concerns and how far it is and can be linked with other collections of the curriculum.

- The experiential quality of undergraduate curricula. How far do they encourage students to help determine their own patterns of work and commitment to discovery and analysis? And much can those humanistic and developmental objectives be reconciled with the need to preserve intellectual rigour and the mastery of generic intellectual skills?

- Higher education and external influences. Higher education is increasingly subject to external pressures and demands, as a consequence both of current policy shifts and of its conversion from an "autonomous" to a "mass" system explicitly serving multiple constituencies. It is becoming open to enquiry to discover what the effects on academic working and life-style might be (Bauer *et al.*, 1994).

- The relationship between teaching and the world of employment. Research on the qualification and employment specificity of undergraduate education and on the extent to which universities do and can teach transferable skills.

- The nature and staffing of the academic community. The recent international Carnegie study has tested the hypothesis of a single profession (cf. Clark for the USA), its responses to external pressures, to structural change (including rationalisation, segmentation and selectivity) and to the changing organisation of knowledge. Questions of recruitment, training and mobility within and beyond the profession are of urgent policy relevance and have been the subject of a recent OECD study based however on largely independent research (Kogan *et al.*, 1994). One concern is the demography of the profession; this issue has been elaborated by recent studies (e.g. Pearson, 1992; Davidson, 1991) which show more complex movements in the labour markets as they respond to the quite different external markets in each discipline.

- The finance of higher education. There are several levels of concern here. There are the higher accountancy issues, of the resources reaching higher education, of the varying units costs, and the like. The relative cost will certainly become more important as the single market takes hold. There are the more tricky question of financial controls, rewards and punishments as instrument of control and government. There are current issues of how students will be financed as numbers grow and public resources become thinner.

- The social policy aspects of high education. Research has long shown that in spite of expansion access to higher education remains limited to the better off social classes, and this is in spite of strenuous efforts in such countries as Sweden to change the balance. Gender differentiation is now less sharp, and in many countries more than 40 per cent (it used to be 20 per cent) of undergraduates are women. But this change has yet to be reflected in recruitment to academic staff, particularly at the professorial level.

Regional knowledge requirements

Universities must always hope to be part of an international knowledge network, but increasingly even the most traditional and prestigious look to their region and locality for support, and also claim credit for adding to their economic and social strength. In many subject areas, but particularly in the socially orientated subjects such as planning, environmental studies, education, social work or health service studies, or in the ecological dimensions of biology or geography, the locality, its population and its public services serve as the legitimate testing ground and laboratory of research and development. In times of political challenge and resource constraint, universities may look to the local political system and its employer and trade union leadership as a source of political support in facing national funding bodies. A knowledge of the region and locality, and active working with their institutions and main groups, thus form an indispensable background for the knowledge required for the institution. These requirements are even stronger for institutions below the university level which design many of their offerings to meet local and regional needs.

Knowledge for the institutions

The knowledge required by an institution depends critically on the concept it holds of its place in higher education and the wider society and the role created for its leaders. In an ideal world, all institutional leaders would be interested in and benefit from research activities. In practice, it is the experience of higher education researchers that academic leaders often make poor generalisations about subjects on which research evidence is available. Yet it must be recognised that the bulk of independent research will at most have an illuminative or percolative effect, rather than be directly useful to policy-making, management or development. Some of the most useful R&D will be more useful to consultancy than research, for example enquiries or development work directed to helping the sponsors meet their objectives.

Taking then a somewhat minimalist view of institutional needs, it is best to look at the main institutional functions and from them determine the knowledge that might allow them to be performed most effectively. Many will be the same as those stated above for the system as a whole, but with think-through and, where necessary, local research studies, R&D can meet particular institutional needs. A selection of the themes might be as follows:

- Institutional portfolio and needs assessment. All but the most privileged or controlled (e.g. military academies) institutions need to assess their clients' potential demands and needs in order to ensure that their services will receive adequate sponsorship. From such a needs assessment it becomes possible to create an institutional portfolio.

- The framework for such an analysis would be the national data outline developed earlier; the national economy is the unavoidable framework for the institutional economy. Institutions require a picture of the changing nature of their educational population, their size, socio-economic and ethnic make-up, and local economy. Again, needs analysis should be conditioned by feedback from users which gives some idea of the impact of policy. These factors could affect teaching, R&D, out-reach and consultancy programmes, and the efforts made to reach what now must be treated as markets. They might also contribute to the planning of future staffing requirements. Knowledge of this kind might be generated or collated, when there are already good local censuses and other

data, by trained administrative or planning staff, or by the relevant academic departments of the institution, or by researchers or consultants employed for the purpose.

- Internal management and governance. The national studies proposed above should provide a range of normative or tested empirical models on which institutions can draw. The dimensions suggested that they may be applicable in whole or in part to many institutions as the total governmental structure changes.

- Knowledge use would be at two levels. Institutions would need to decide the way in which powers and functions are distributed -- the compositions and powers of governing bodies; the relationships between senates and other governing bodies and rectors; the relationships between deans, heads of departments and individual academics; the interface between academic leadership and non-academic administrators. There would then be a need for organisational negotiation, installation and development -- matters for university staff and academic leaders, with or without the help of consultants. But it would be a pity if the more reflective institutions did not also install evaluation which could not only yield judgements of the efficacy of the arrangements but also contribute to organisational testing and theory on a wider scale.

- The costs and benefits of changing structures and policies. The financial and opportunity costs of change are rarely charted. Even less are the impacts on working practices and perspectives. These would be tasks for university staff and, on impacts, for external research teams.

- Staffing flows and academic markets. Institutions should consider their potential staffing needs alongside preparation of their portfolios and forward strategic plans. In doing so they need to bear in mind the national and international studies of staffing demography which show disciplinary differences in academic labour-markets and the importance of not making simple assumptions about recruitment and retirement patterns. They need also to think less casually about the employment and adequate incorporation of temporary and part-time staff (Kogan *et al.*, 1994).

- Again this is work primarily for university staff, but possibly with the aid of researcher-consultants. All universities can benefit from the excellent national studies already made or being made (e.g. El-Khawas, 1993; Pearson *et al.*, 1990; Davidson, 1991; Sloan *et al.*, 1990).

- Academic productivity. Recent studies (Kyvik, 1991; Johnston *et al.*, 1993) have shown that policy assumptions about the factors making for academic productivity are over-simplified. For example incentives are confused with rewards. Once a fairly low threshold of size and resource is crossed productivity levels off, so that increasing the size of teams or departments does not necessarily lead to increased excellence or productivity. Such findings could be the starting point for organisational development, which again could be usefully evaluated externally.

- Curriculum development and teaching and learning. Many institutions in many countries are accepting the necessity of ensuring that these functions are performed adequately; some OECD country reviews reveal serious short-falls in curriculum development and educational procedures. There are also pressures for curriculum reform, away from

exclusive concern with disciplinary based knowledge towards more experiential and skill based knowledge.

- There is already a considerable body of knowledge about how the curriculum might be evaluated and planned and also good material on the nature of the learning process. But increasingly this body of knowledge will be required for two institutional purposes. First, it could contribute to the evaluative base from which institutions monitor teaching quality. Second, it should contribute to creative thinking about the whole educational function which must become more securely a key task for leading academics, with the help of staff development specialists. If evaluated fully these activities could contribute to the stock of case studies from which modelling and theory development could ensue.

- Quality assessment is implicit in much of the above. A great deal of research and development is taking place nationally and internationally on the purposes, power implications, techniques and impacts of different forms of internal and external assessments. Not all of the lessons of this work are taken up institutionally. Institutions must both conform to national requirements and develop their own evaluative structures as best suited to their missions and portfolios. It will be for them, for example, to decide on the extent to which evaluation by students, past and present, and by their employers, should be elaborated.

- Models for such exercises are available in a great deal of literature. It is important, however, that institutions do not take, as *ex cathedra,* the policy assumptions or technical structures proposed by either evaluation pundits or funding bodies. Much current thinking is normative and research on impacts is relatively meagre.

- Institutions do not have the resources, and may not have the patience and direct interest, to sponsor research as opposed to consultancy or evaluation. But if they purse their own objectives with the help of disciplined enquiry, it would be surprising if they were not at the same time testing received assumptions in both existing theoretical and empirical studies. For this reason, such projects as the OECD's IMHE provide a valuable forum for sharing and publication of institutional experiences.

The working academic levels

Working academics should benefit from the creation and diffusion of knowledge at the international, national and institutional levels. If they participate in staff and organisational development exercises current research on teaching and learning and patterns of governance should be available to them. On the whole there is remarkable lack of use of such knowledge as individual academics struggle to create syllabuses, assess their students, and deliver the curriculum. Nor is there much appreciation of the optimum conditions under which research and scholarship are undertaken.

Many of these issues are initially the responsibility of senior academics within departments who should accept a mentoring role for their more junior colleagues. It may suffice to note examples of research that might illuminate the decision-making and mentoring of both institutional and subject leaders:

- Academic productivity in research is not strongly related to resources or to unit size once a reasonable threshold is crossed (Johnston, 1993). More important is uninterrupted time

for work, the social organisation of work, and opportunities to network within and outside one's departmental base. Incentives are often confused with rewards (Lonsdale) and may be actively disincentives. (The productivity of Nobel laureates falls off after the award (Zuckermann, 1977)). These considerations should affect departmental allocation of tasks, award of sabbatical leaves and resources.

- Departmental portfolio building is as important as that of institutions. It is departments who make the main working contacts with clients. To some extent the relevant data about external demands can be disaggregated from that collected by the institutions (or vice versa), but specialist demands are best demoted by specialists.

- Curriculum building is pre-eminently a task at departmental level. A range of systematic tasks for enquiry is evident here. Learning theory would be a background; findings on the nature of skills transfer, of "deep" as opposed to "surface" learning, of the relationship of formal to experiential learning are all relevant. At the same time teachers must be up to date on the content of curriculum as judged by both academic and employment criteria.

Distance learning

Among the tasks of curriculum building is that of addressing the need and demand for open and flexible learning. A survey conducted by CERI in 1994 showed that a large proportion of universities are now involved in distance teaching. In many countries the majority of students are adults rather than school-leavers. The example set in the 1960s by the UK's Open University has been copied elsewhere and has also led the way to even the most traditional universities offering a double track of instruction and guidance for students at all levels. These may take the form of second chance education, recurrent education, which includes programmes to facilitate adaptation to changes in technology, meeting the needs of individual companies or to provide primary access to higher education to those in remote areas, as with radio schools in Australia, or for the education of teachers as in some African countries where it can be combined with college attendance (Curran, 1992).

Such developments require considerable adjustment to conventional teaching and administrative patterns. They require explicit disclosure of the curriculum by teachers so that its contents and themes can be transmitted to a wide and sometimes invisible client group. It leads to some alignment of power among academics who may be expected to leave their main subject base in order to participate in collective curriculum packaging activities. They must also pay closer attention to quite different forms of didactics, as material is made user-friendly for remote audiences.

Open learning necessitates new knowledge for decision-makers and different resource flows and systems of rewards and inducements. It calls for particular forms of marketing and publicity. It depends on the use of a wider range of media than traditional teaching necessitates.

Internationalisation of the curriculum

Yet a further influence on the curriculum, requiring sustained analysis, if not research as such, is the internationalisation of the curriculum. As economies become global in reach and intention, and the labour-force internationally mobile, the curriculum in some areas, and the modes of instruction, require modification. The background of students should in any case be part of the

knowledge for which teachers should be reaching as their clienteles widen in age, gender balance, country and region of origin and needs and interests.

Taking account of research in these areas would involve a major shift in values and practices from that of the individualistic researcher-teacher to the professional concerned with development of approaches and skills in the whole range of academic tasks.

Some conclusions

Supporting the wide range of disciplined enquiry

The nature of the studies mentioned in this paper is wide and reaches well beyond the normal definition of research -- the discovery of new knowledge. We are proposing the exploitation of what Cronbach and Suppes have called disciplined enquiry which encompasses research, development, scholarship applied research and evaluative studies, and consultancy. We must also take into account the utility of ordinary knowledge (Cohen and Lindblom, 1979). Each mode can be used opportunistically, but with two reservations. Knowledge must be made credible by conforming to the academic criteria of evidence, logic and demonstrability, except perhaps ordinary knowledge which can be objectively "untrue" but still enter the policy bloodstream as relevant supposition and sentience. Almost any of them can be used for application or as adding to the stock of knowledge or used from a critical perspective. It depends on the purpose for which research is conducted, the identity of those who sponsor it and the way it is written up and disseminated.

At the same time the definition of disciplined enquiry does and should not exclude those levels of tertiary education that are not engaged in the traditionally strongest forms of research and enquiry. Their faculties should be engaged in teaching and in out-reach activities, including consultancy, problem-solving and development, that will give them a role as active intellectuals in a productive society and economy. Such work should be subject to the same criteria and values as are more academic forms of enquiry, even if the reference groups and sponsors are different.

The second reservation is that there are no free lunches. If higher education depends on consultancy for its knowledge without the testing and refreshment of concepts provided by curiosity driven research, in the end it will be banal and purvey no more than received wisdom. Equally, if theory and scholarship are not recurrently tested by the shifting experience of higher education at all its levels, it will be abstract and devoid of relevant content. The different forms of knowledge should form a virtuous cycle in which critique ultimately strengthens operational knowledge. Good 'real' research into higher education will illuminate either critically or supportively the actions of the activists. Without it, for example, we would not have built up the case for expansion or the link between economic productivity and higher education, or the critique of wholly disciplinary based knowledge and the creation of new matrixes of deep scholarship and praxis. Only weak development eschews the critical. The system needs those able to bring together knowledge of how best to provide staff development, ensure competent and fair evaluation and install good systems of management and administration. Those undertaking these tasks do best if they have a firm grasp of changes in the theories of knowledge and curriculum structure; of evaluative theory and the enormous ambiguities and ambivalence that evaluation produces, as well as the research based technical issues of how to ensure validity and reliability. Management structures are saturated by problems which are the bread and meat of political science and organisational sociology.

Sponsorship

This implies open and eclectic forms of organisation and sponsorship. Some countries provide adequately for higher education research, and these are not always those most in need of it. Higher education can not do without public funds. But there is always the question of who will set the agenda. Most countries make some provision for dividing research sponsored by government for its own purposes from research that will lead to free and critical enquiry. In giving contracts for sectoral research there are good examples of governments that take care to work out collaboratively the objectives of the research and its mode of operation. They may also be liberal in their policies on publication. But there are many unsatisfactory aspects of research commissioning in many countries. We are experiencing immature customers everywhere. They may know what they want, but do not negotiate the objectives of the work. They ask for tenders at very short notice -- sometimes a few weeks for work to be started in a few weeks. The balance of funding has shifted seriously from independent research to consultancy and sectoral research. There is not much space for considering higher education as a fascinating social phenomenon.

Given adequate support there is room for mutual support between the world of policy and action and that of academic exploration. This requires a good structure for research commissioning in which there is a reasonable balance struck between mission-oriented and curiosity driven forms of enquiry and active responsiveness to clients at all levels. Government machinery must ensure that R&D is well related to the products of evaluation, and that users well as providers' perspectives are recruited to the commissioning processes. Thought must also be given to ways of sustaining the research community through adequate training and career progression.

Summary of main points

a) Tertiary education differs in important respects from other phases of education and therefore has its own distinctive knowledge requirements.

b) As a result, R&D is undertaken by separate groups of researchers who are sponsored in different ways.

c) Major changes in policy have created new concepts, styles and structures in higher education; it follows that the knowledge relevant to running and developing higher education will be multiple.

d) Tertiary education can be strengthened in its international R&D dimensions by a range of international market and bidding procedures, pooling resources and creating common forums, establishing an international knowledge base and engaging the interest and sponsorship of multinational firms.

e) Different systems need to produce quantitative data in forms which make international comparisons possible. At the same time independent researchers could produce more qualitative data.

f) National knowledge requirements include data on the nature of educational populations and of the economy; insights into educational wants for conversion into a needs analysis; accounts of patterns of institutional organisation; evaluation of costs, benefits and impacts of policies; and knowledge of what might work in education. They also have political needs.

g) Whilst systems need quantitative data sets, many have arisen from independent research groups. A large range of potential research is noted which should be usable by systems managers and policy-makers, institutions and the academic professions.

h) At the institutional level, it should be possible to draw upon both independent and national knowledge creation. Institutions themselves may find it useful to generate applied research and consultancy on their particular needs. These might include the creation of the institutional portfolio, clarifying internal management and government, costs and benefits of their actions, staffing flows, academic productivity, curriculum development and quality assessment.

i) At the working academic levels, research on academic productivity, needs analysis leading to departmental portfolio building and curriculum building are obvious areas of direct interest.

j) A wide range of disciplined enquiry is therefore necessary for the support of higher education. This will range from theoretical research to consultancy. It will also encompass Ordinary Knowledge. But, for the most part, knowledge should be subjected to the academic criteria of evidence, logic and demonstrability.

k) Short-term consultancies are necessary for many maintenance functions in tertiary education. But this will become thin if not related to a continuing flow of more fundamental research. At the same time, experiences of the practical world of tertiary education should feed into the development of more fundamental knowledge.

l) Organisation and sponsorship need to be open and eclectic to meet all of these needs. Research commissioning should strike a reasonable balance between mission orientated and curiosity driven forms of enquiry and active responsiveness to clients at all levels.

m) Government machinery must ensure that R&D is well related to the products of evaluation and that users as well as providers' perspectives are recruited to the commissioning processes.

n) It is necessary to sustain the research community through adequate training and career progression.

BIBLIOGRAPHY

BAUER, M., HENKEL, M., KOGAN, M. and MARTON, S. (1994), "The impacts of reform on higher education: an Anglo-Swedish comparative study", unpublished paper delivered to Consortium of Higher Education Researchers, University of Twente, October 1994.

BECHER, T. (1989), *Academic Tribes and Territories: Intellectual Enquiry and the Culture of Disciplines*, The Society for Research into Higher Education and Open University Press.

BECHER, T. and KOGAN, M. (1992), *Process and Structure in Higher Education*, 2nd edition, Routledge.

BIGLAN, A. (1973), "The characteristics of subject matter in different scientific areas", *Journal of Applied Psychology*.

BLOOR, D. (1976), *Knowledge and Social Imagery*, Routledge and Kegan Paul.

BUCHER, R. and STRAUSS, A. (1961), "Professions in process", *American Journal of Sociology*, Vol. 66.

CLARK, B. R. (1983), *The Higher Education System*, University of California Press.

COHEN, D. and LINDBLOM, C. E. (1979), *Usable Knowledge*, Yale University Press.

CURRAN, C. (1992), "Institutional models of distance education -- a national co-operative programme", *Higher Education Management*, Vol. 4 , No.1, OECD, Paris.

DAVIDSON, R. (1991), "Averting Faculty Shortages", Discussion paper on the Canadian Academic Labour-Market in the 1990s, Association of Universities and Colleges of Canada.

HENKEL, M. (1992), *Government, Evaluation and Change*, Jessica Kingsley Publishers.

HENKEL, M. (1994), "Epistemic identity and changing concepts of higher education", paper presented at research seminar, Higher Education Policy and the Organisation of Knowledge Production, University of Bergen.

KOGAN, M. (1979), *Education Policies in Perspective: An Appraisal of OECD Country Education Policy Reviews*, OECD, Paris.

KOGAN, M., El-KHAWAS, E. and MOSES, I. (1994), *Staffing Higher Education*, Jessica Kingsley Publishers.

KYVIK, S. (1991), *Productivity in Academia*, Norwegian University Press.

LONSDALE, A. (1993), "Changes, incentives, rewards and sanctions", *Higher Education Management* Vol. 5, No. 2, OECD, Paris.

MULKAY, M. J. (1979), *Science and the Sociology of Knowledge*, George Allen and Unwin

Skolverket (1995), *School Research at the Crossroads*, Stockolm, Sweden.

PEARSON, R., BUCHAN, J., BEVAN, S., JACKSON, C., and STOCK, J. (1990), *The Recruitment and Retention of University Academic and Academic Related Staff*, Vol. A, Pt. 1, Summary, IMS Paper No. 157a IMS, University of Sussex.

SLOAN, J. and BAKER, M. with BLANDY R., ROBERTSON F. and BRUMMITT W. (1990), *Study of the Labour-Market for Academics*, Australian Government Publishing Service Squire.

TEICHLER, U. (1993), "Research on higher education in Europe: some aspects of recent developments", in EAIR, *Towards Excellence in European Higher Education in the 1990s*, Proceedings, 11th European AIR Forum.

WEISS, C. (1980), *Social Science Research and Decision-Making*, Columbia University Press.

WHITLEY, R. (1984), *The Intellectual and Social Organisation of the Sciences*, Clarendon Press.

ZUCKERMANN, H. (1977), *Scientific Elite*, The Free Press.

4. The Knowledge Bases for Policy-Making: Policy Conclusions

4.1 Information needs in the policy arena: Linking educational research to the policy cycle

by Ray C. Rist, Director
Centre for Policy Studies
The George Washington University
United States

Background and introduction

Concern is expressed time and again in educational research communities that their advice and pleas are neither heard nor well understood by the policy-making communities. There is a feeling of being shunned and misunderstood by those in the policy arena who would benefit greatly, if only they realised their errors. Various admonitions, strategies, and approaches are proposed to rectify this persistent gap between those educational researchers and policy-makers. Calls to increase stakeholder involvement, build trust with policy-makers, mobilise political support, keep reports brief and succinct, popularise research findings, and provide materials to policy-makers on an ongoing basis are but six among the multitude of suggestions currently bantered about on how to rectify an unrequited relationship.

The educational research community's lament of non-appreciation nevertheless seems to be losing its credibility, at least in the United States. This now 25-year lament existed even before the creation of the NIE (National Institute of Education) in 1973. With a budget of more than 100 million dollars per year it was supposed to allow the serious business of educational research impacting on governance to begin. Why is it that a quarter century later fewer and fewer persons are listening? Is the educational research community waiting for Godot?

It is perhaps true that economists for example also underwent such a stage in their own development. But economists as well as other professionals seeking a public voice related to a public function (medicine, criminal justice, transportation, environmental protection, auditing, or housing) do not seem to express the same discontent continually heard from educational researchers.

Something has gone awry with the educational research community on this matter. The persistent attention to the "gap" between the policy community and the research community seems to transcend the recognition of different institutional and cultural norms. It even seems to go beyond the recognition and analysis of the legitimate separation of responsibilities between these two largely public sector domains. I do not know if it reflects a deep-seated perception of status deprivation in the profession, or grand expectations that cannot be fulfilled, even under the best of circumstances, unrelenting naïveté to do good, or the need to be appreciated. But the train is off-track.

Scholars in the sociology of knowledge, in research utilisation, and in the history of professions have here a rich vein of ore to mine. Some who are interested in the link of social science and public policy have begun to do so. Chelimsky asked, in a 1991 article, why is it that social science research frequently is not in a position to support the information needs of decision-makers. Her answer (1991, p. 226):

> "What then are the kinds of mismatches that contribute to prevent research from supporting decision needs appropriately? I see at least three: (i) when political requirements are so overwhelming that information simply will not be sought; (ii)

> when information is sought, but contextual or resource constraints on the analysis impede researchers from actually producing the information needed for the decision; and (iii) when 'state of the art' research problems allow only inconclusive answers to decision-makers' questions. In any of these situations, there are constraints--either on the decision or on the research -- that tend to prevent a match between the two from occurring".

The modest proposition of this paper is that it may be time to re-examine the issue of what linkages can and should exist between the research and policy communities. Furthermore, it will suggest that the time has come to look at the linkage, not from the vantage of the needs and logic of the research community, but from the needs and logic of policy-makers operating within the policy arena. I am thus adding a fourth mismatch to the list provided by Chelimsky -- that the research community has very little understanding of the policy arena and how or when information is or is not used within it.

Many if not most educational researchers have never worked in the policy arena; few have ever had to exercise power in a conflict-laden environment open to incessant public scrutiny, few have faced, for example, the unyielding demands of the yearly bureaucratic cycle with its requirements for budget and programme justifications, public hearings, and pressures from special interest groups; and few have sat across the table from government auditors, hearing their demands for evidence to ensure accountability and effectiveness. Governance in the public sector is its own domain with its own order and logic -- just as the university or research institute is its own domain with its order and logic. In the words of Sally Brown, "Education researchers do not know their policy customers" (Brown, 1994-95).

That the domains are different is not the issue. That they do not connect well is a given. The matter before us is whether and how such connections can be built -- and whether it truly matters if they are. For a quarter century we have been told that the educational endeavour will be better served when strong linkages are forged. How long must we wait? It appears we are in a cul-de-sac and cannot find our way out.

The information needs in the policy arena

The framework to be developed suggests that the policy arena has a set of information needs that roughly coincide with the different phases of the policy cycle. While there is no guarantee that providing the relevant information to the policy-maker at the appropriate time in the policy cycle will ensure awareness, it is relatively safe to presume that getting it there at the wrong time will result in little or no attention. Many in the educational research community have seemingly little understanding of these differentiated needs for information by differentiated sets of policy actors in the policy cycle. They therefore seem perpetually prone to provide their information at the wrong time and to the wrong set of policy actors.

The policy cycle has four relatively distinct but clearly overlapping phases -- agenda setting, formulation, implementation, and accountability. Each of these four phases, again relatively distinct but overlapping, has its own distinct information needs and involves different policy actors. The challenge for those in research communities who seek to make their information available to those in the policy communities is to match, if and when they can, their information to the information needs in the policy cycle and the appropriate policy actors at the time. The demands are dual: know the

appropriate information needs in the respective phases of the policy cycle, and know which sets of policy actors require such information and when.

Most of the information educational researchers would like to see penetrate the policy arena is likely not to do so. Regardless of the dedication or fervour of researchers and the sincere desire to have their information become part of the policy process, more often than not it simply does not. There are multiple reasons for this, and the literature on research utilisation (or not) has explored these in some detail. There are problems on the producers' end, on the users' end, in the mediating processes that are supposed to translate between the two, and with content. All in all, the opportunities to create a good match between the information needs of the user, the information generated by the producer, the means to convey the information in a timely and readable fashion, and the awareness by each of the existence and needs of the other are extremely few in number. Indeed, in those rare instances when all was aligned and relevant information made it into policy processes, researchers tended to talk about them in hushed tones.

In the OECD/CERI report which has helped to frame this present conference, entitled *Educational Research and Development: Trends, Issues and Challenges*, there is the following quote in the section entitled "Linkages in the R&D System" (p. 64): "Research and policy must communicate at different phases of R&D projects...". This seems to be a typical quote from the educational research community and why the conditions described above now exist. Here the communication requirements are framed not on the information needs of the policy community, but on the basis of the "different phases of the R&D projects". Indeed, there is no acknowledgement that there should be any other basis for communication besides the researcher's frame of reference -- R&D project phases.

The phrase is stated in the impersonal and the imperative: "Research and policy must communicate", not: "Researchers and policy-makers may choose to communicate", or some such wording. Putting a human face on this relationship -- if there is to be one -- is essential. The policy arena is populated with people, not abstractions of "policy"; they are people who live in a political web of many contending forces and cross-pressures. They may or may not choose to act in a particular manner on a particular topic, and at a particular moment, regardless of the admonitions of researchers that they "must communicate at different phases of R&D projects...". Who is to say they must, indeed? The quote should be restated in the following manner: "Researchers and policy-makers may find it mutually beneficial to communicate, if appropriate and useful, at different phases of the policy cycle."

This paper will also introduce, at several points in the text, one other information need in the policy arena that appears missing from the current efforts of educational researchers -- that of the analysis of when and why to select from among different policy instruments. This is a continuing and central challenge facing those who govern. Among the toolkit of policy instruments available to government, when is one tool or instrument more likely to be successful than another? The current state of educational research appears to largely bypass this central information and analysis need of policy-makers. For example, careful analysis of when and whether to offer loans instead of grants, when to provide services directly versus privatising those services, when to use market forces or to regulate, and when to centralise versus decentralise administrative functions are but four among many such policy-tool questions, all of which seem to eschew the radar screens of educational researchers.

In this paper, the recognition for the need to study policy tools will be developed to complement the analysis of the policy cycle. To wit: Policy formulation involves the discussion among alternative policy tools; policy implementation involves the implementation of whatever tool

or tools are selected to achieve the policy objectives; and policy accountability involves the assessment of the outputs and impacts the policy has had via the selected tools for the initiative.

Such an emphasis on policy tools is important because a deeper understanding of the tools available to different governments and how each can be more or less effectively used to achieve policy objectives can clearly inform policy-makers. Comparative understanding of how and when to use subsidies, when to use regulations, how to create incentives for the participation of the private sector, and how to enhance in-service teacher development are all examples of areas where governments have much to share and much to learn.

The selection of one tool rather than another is a policy choice for which few guiding data are available. Further, educational research to help policy-makers in this regard is extremely sparse. It probably lags far behind the work done in health care or criminal justice, for example. Policy-makers appear to decide on the selection of a particular tool based either on past experience or on their clear proclivity for or against certain tools.

There are a number of contextual factors that help frame the selection of a tool. These are amenable to careful research, though little is taking place. To suggest just four: resource-intensive, targeting, institutional capacity, and political risks. To complicate matters, the mix of these concerns for any given tool will shift when moving from one phase of the policy cycle to another. Keeping the financial costs low and national government involvement to a minimum, for example, may be of high priority to federal lawmakers during the formulation stage. But these will also have consequences during the policy implementation stage and the ability later on to assess accountability.

The points of this paper thus far can be summarised as follows:

- Educational researchers and policy-makers are in different institutional domains with different cultures and incentive structures;
- Educational researchers know little of the domain of public sector governance -- and do not seem to be achieving a better understanding;
- Educational researchers have been largely ethnocentric in their view of what they believe they should be able and allowed to contribute to the information needs in the policy arena;
- Information needs and the policy actors are differentiated in the policy process by the characteristics of the different phases of the policy cycle; and
- A key information need of the education policy community is when and why a particular policy instrument should be chosen over and against other available policy instruments. The educational research community is largely silent on this type of analysis.

This assessment will serve as the framework for a discussion of the information needs at each stage of the policy cycle. The aspiration is that with such an analysis, the OECD/CERI initiative on generating the knowledge bases for national and international educational policy-making can be enhanced. Of particular concern will be the analysis of the information needs at each phase of the policy cycle. The goal is to move outside the current framework as articulated by educational researchers on whether, when, and how they and policy-makers should communicate.

The policy cycle

A framework within which to view the contributions of educational research to the policy arena is through the study of the policy cycle. The concept of the policy cycle has been addressed now for more than a decade by, among others, Chelimsky (1985), Guba (1984), Jones (1982), Kingdon (1995), Nakamura and Smallwood (1980) and Rist (1989, 1990, and 1994). As noted earlier, there are four phases to the policy cycle and each has it own actors and information requirements. Thus, for educational researchers, the challenge (and the opportunity) is to learn more of the policy cycle and how it is that relevant information can be brought to bear at the appropriate time and provided to the appropriate policy actors. The questions asked at each phase are distinct. The information generated in response to these policy questions is used to different ends.

Policy-makers most desire information that allows at least a modest instrumental use. They would like it to be as instrumental as possible, but they settle for what the social science community can produce. The pressures on persons in these positions to direct the use of resources, be they budgets, staff, facilities, or information, simply does not allow for the luxury of funding work that only promises diffuse, indirect, and conceptual uses. Policy-makers fund research that is aimed at being policy relevant in the continual pursuit of information that they hope they can use. (This is not to negate the sometimes necessary funding of research for strictly political or symbolic reasons.)

The political arena encourages all kinds of information to be brought to the table in the discussion of public policy issues. Social science data are but one kind of information that can be used, given the right conditions and the circumstances noted above. But in the end, the decision-making process is seldom if ever entirely predicated upon data. And, importantly, it probably should not be. The view of many others in the political arena must be heard and accounted for. These other voices may or may not speak with data at hand.

But for the political system to work, their positions have to be granted a legitimacy within the decision-making process. The exercise of power is not to be equated with the interpretation of data.

Phase one -- Agenda setting

Decision-making in the policy arena can be broadly characterised as occurring at four phases of the policy cycle. The first phase involves the establishing of the general parameter of governmental action, for example, providing national health insurance, restructuring national immigration laws, re-examining the strategic objectives of multi-lateral trade agreements, or strengthening the linkages between school and work. Kingdon calls this phase "agenda setting" (Kingdon, 1995). This is the phase in which topics come to the attention of officials, in which some agenda items and alternatives are prominent and others are neglected, and where these all come together to place an issue on the national agenda. Kingdon writes of three streams -- politics, policies, and problems -- and the fact that while they flow separately most of the time, there are those instances when they come together and create the conditions for policy changes.

One condition that generates influence on agenda setting is the inevitable march of problems pressing in on the political system. The pressure can come from a single event or crisis, or it can come from the gradual accumulation of events that finally demand to be acknowledged and recognised. Another way of becoming aware of an emerging problem is the change in the status of an important indicator. Any or all of these means can generate pressure on the political agenda. One can

think of examples in education that reflect this influence on the agenda: A single event might be a national teachers' strike or the closure of schools due to budget constraints, an accumulation of events might be the increasing frequency with which teachers are assaulted in schools by students (the estimate presently in the United States is that of the approximately forty million students in the elementary and secondary public systems, approximately 100 000 students come to school each day with a weapon), or the change in an important indicator may be the growing unemployment of secondary school graduates or the number of trained teachers who cannot find work in teaching upon graduation.

Another contributor to governmental agendas is the slow but steady accumulation of knowledge built up in the research community on an issue. More is known today than twenty years ago about acid rain, about the transmittal of the HIV virus, about ozone depletion, about the safety of nuclear power plants, or about learning disabilities. All of these areas of inquiry have had an impact on agenda setting through the development and refinement of the basic understandings, of discussion and speeches, of policy papers and special interest groups advocating one or another approach to address the condition, and of the diffusion of the scientific concepts into the everyday language of lay persons via the media.

A third contributor to the generation of agendas in government is the media. The media have come to play an important role in the diffusion and dissemination of scientific knowledge. They are increasingly the cultural mediators of the issues and conditions that receive national attention and those that do not. That significant gaps exist between the scientific communities and the media's understanding and reporting on scientific work is well understood. But it is also clear that some issues do leap over from the accumulation of scientific knowledge into the media and the conveyance of this information to the citizens. It is my view that the education community still has a long way to go in understanding how to successfully inform the media of its work, of assisting in the translation of scientific knowledge into public understandings, and in helping the media to differentiate central issues from those on the periphery.

A fourth contributor is the special interest groups. Here is found the mobilisation of those with a particular agenda, be they corporations, NGOS, volunteer citizen groups, or national associations of persons in similar roles (doctors, lawyers, teachers, airline pilots, farmers, etc.). They are all constantly at work to further their own point of view, supporting those views with research and data when possible, but not being restricted to data for the development of their positions. Some groups in the educational field do this rather well (in the United States, for example, teacher unions and parents of children with disabilities); others (particularly educational researchers) do this rather poorly.

Finally, there are the activities and actions in the political arena that affect the agenda. Newly elected administrations, shifts in the public mood, budget constraints, tax revolts by citizens, and political crises are all examples of the forces that have powerful effects on national agendas. They can all capture the attention of politicians. They can all help to push some items higher onto the national agenda and drive other items off completely. Education is an area that seems especially vulnerable to these activities and actions of the political arena. The overwhelming majority of persons directly involved in the educational system do not vote, do not pay taxes, and are not organised. They are students. This translates into a high degree of political vulnerability.

What complicates the agenda-setting process is that each of these contributors can at different times be either an impetus or a constraint to change. When they are an impetus, they help move items higher on the national agenda and give them more national recognition as an issue to be

addressed. When they are a constraint, they can block movement. If the media do not pick up on an issue, it is considerably more difficult for that issue to move. Special interests can checkmate one another and stop movement. The examples can go on. It is easier to stop an issue from moving up the national agenda than it is to facilitate it in the process.

There are clear opportunities here for educational research: to work with the media to educate them on issues of education; to focus attention on a small but highly policy-relevant set of indicators; and to further research on a defined set of nationally perceived problems with the hope that the steadily accumulating information will make a dent on the national consciousness. Researchers can start to build coalitions with others in the educational system. How many educational researchers have consulted with an education union official or a school administrator?

The agenda-setting phase of the policy cycle is precisely when educational researchers have the most difficult time defining their own role. It is at this stage when profound changes in the policy arena can take place with little or no research input. Whether the changes in the governing system arise incrementally or discontinuously, they do so because of a whole host of pressures and events completely unrelated to social and behavioural research findings. To argue that some input and potential contribution is better than none reveals modest expectations -- anything more would be simply fortuitous.

Phase two -- Policy formulation

Nakamura and Smallwood (1980, p. 31) define policy as follows: "A policy can be thought of as a set of instructions from policy-makers to policy implementers that spell out both the goals and means for achieving those goals".

How is it that these instructions are crafted, by whom, and with what relevant policy information and analysis? The answers to these and similar questions can provide important insights into the process of policy formulation. The phase of policy formulation can be thought of as the systematisation of agenda-setting. Agenda-setting can push a topic onto the national stage. The script for how the play is to proceed comes from efforts at formulation. Formulation takes place when a decision has been made within the political arena to which the governance system has to respond. The pressures noted earlier have built to a level where ignoring the situation is no longer a viable option. The question becomes -- What is to be done?

As the formulation phase opens, a number of pressing queries ensue about the problems or conditions at hand. Answering each question necessitates compiling whatever information is currently available, plus the development of additional information when gaps are too large in the present knowledge area. The information needs can generally be clustered around three broad sets of questions. Each is highly relevant to policy formulation and yields important opportunities for presenting and utilising research findings.

The first set of information needs revolve around an understanding of the policy issue at hand. What are the contours of this issue? Is the problem or condition larger now than before, about the same, or smaller? Is anything known about whether the nature of the condition has changed? Do the same target populations, areas, or institutions experience this condition now as earlier? How well can the condition be defined? How many definitions are there and what evidence supports each of the definitions? How well can the condition or problem be measured? How long has it been measured? What is presumed to be the cause of the present problem or condition? How many alternative cause

and effect interpretations exist, and with what supporting evidence for each? The issue here, stated differently, is one of the certainty and clarity with which policy-makers are able to define the problem, its causes, and its consequences.

The second cluster of questions focuses on what has taken place previously in response to this condition or problem. What programmes or projects have previously been initiated? How long did they last? How successful were they? What level of funding was required? How many staff were required? How receptive were the target populations or institutions to these initiatives? Did the previous efforts address the same condition or problem as what is currently understood to exist, or was it different? If it was different, how so? If it was the same, why are additional efforts still needed? Are the same interest groups involved? What may explain any changes in the present configuration of the interest group coalitions?

The third cluster of questions relevant to the formulation stage of the policy cycle focuses on what is known of the previous efforts and their impacts that would help choose from amongst present options. Considering trade-offs among various levels of effort in comparison to different levels of cost is but one among several forms of data relevant to considering policy options. There may also be data available that suggest how long before one would likely see any impact from a particular strategy. Trade-offs between the length of the developmental stage of the programme and the eventual impacts are relevant, particularly if there are considerable pressures for a short-term solution. The tendency to go to "weak thrust, weak effect" strategies is well understood in these circumstances. Alternatively, if previous efforts did necessitate a considerable period of time for measurable impacts to appear, how did the policy-makers in those circumstances hold on to the public support and keep the coalitions intact long enough for the results to emerge?

An additional contribution that research can make at this stage of the policy cycle is that of studying the intended and unintended consequences of the various policy instruments or tools that might be selected as the means to implement the policy (Salamon, 1989). There is a pressing need within the research community to ascertain what tools work best in which circumstances and for which target populations. Very little systematic research has been done in this area -- which frequently leaves the policy-makers essentially to guess as to the trade-offs between the choice of one tool or another.

Research on the previous uses of tools in similar (or nearly similar) circumstances could be of significant help to policy-makers in thinking through which tool or tools to propose in the present circumstances. For example, research information could be highly informative to policy-makers when deciding about whether to provide services directly from the government, or to give the recipient a voucher for use in the market place as he or she wishes, whether to provide direct cash subsidies or tax credits to employers who hire unemployed youth, and whether to step up funding for information campaigns or to increase taxes as the more effective way of discouraging smoking among young persons. These are but three examples of where good research information on the relative utility and impacts of different policy tools could clearly inform decisions that have to be made.

In this second phase of the policy cycle, research can be useful and even influential. This is particularly so with respect to problem definition, understanding of prior initiatives (both within and across nations), community and organisational receptivity to particular programme and policy efforts, and the kinds of impacts -- both anticipated and unanticipated -- that might emerge from different intervention strategies. This information would be invaluable to policy-makers. But hindrances to the use of such research information are also apparent: The material may be inaccessible and not in a "reader friendly" form when it is needed, and since the research community is not in contact with

policy-makers it cannot provide the information; there are no studies of previous initiatives, and no information on unanticipated outcomes and impacts, community receptivity, and organisational capacity. Finally, researchers may not carefully examine how the pressing present policy demands are or are not like previous instances, thus leaving the policy-maker to guess on how much of the past is or is not applicable.

Phase three -- Policy implementation

It is in this phase that policy initiatives and goals established during formulation are to be transformed into programmes, procedures, and regulations. The knowledge base that policy-makers need in order to be effective in this phase necessitates the collection and analysis of different kinds of information than that found in policy formulation. With the transformation of policies into programmes and projects, the concern moves to the operational activities of the policy tool and the allocation of resources. The concern becomes how to use the available resources in the most efficient and effective manner in order to have the most robust impact on the problem or condition at hand.

The research literature on implementation suggests that it is extremely difficult to successfully accomplish (cf. Hargrove, 1985; Pressman and Wildavsky, 1984; Rist, 1992; Yin, 1985). Quoting from Pressman and Wildavsky (1984, p. 109):

> "Our normal expectation is that new programs will fail to get off the ground and that, at best, they will take considerable time to get started. The cards in this world are stacked against things happening, as so much effort is required to make them work. The remarkable thing is that new programs work at all".

It is in this context of struggling to find ways of making programme and policies work that the data and analysis from educational research can come into play. The information needs to cluster into several areas. First, there is a pressing need for information on implementation itself. Policy research can examine the translation of policy intent into operational efforts, with particular reference to the logic and coherence of the policy intentions as they have been taken into the field and implemented.

There is also the need at this stage to examine carefully how the policy is understood at different levels of the governmental system. The creation of a policy at the national level with a whole host of underlying assumptions, organisational presumptions, and political trade-offs may not survive with anything near its original configuration by the time it goes through the regional level and down to the local level where actual implementation is to take place. This examination of the inter-governmental nature of the policy and programme implementation and how things actually come to be in context is critical to any overall understanding of the success (or not) of the policy initiative (see Toulemonde and Rieper, 1996, forthcoming).

A second cluster of research questions at this stage of the policy cycle focuses on the problem or condition that prompted the policy or programme response in the first place. No problem or condition stands still. Deciding at one point to take action does not mean that the condition or problem will be the same when the response by the appropriate organisation or governmental entity actually gets under way. Problems and conditions change -- both before and after a policy response is taken. Educational researchers therefore face an imperative to continue to track the problem, even as the implementation efforts swing into action. Successful tracking of the problem or condition can provide important information to policy-makers and those responsible for policy implementation. The

persistent question is whether the present policy or programme is or is not an appropriate response to the current condition. As the condition continues to change, the challenge is for the policy or programme to remain responsive.

The third cluster of necessary policy questions during this implementation phase focuses on the efforts made by the organisation or institution to respond to the policy initiative. Here the issue is essentially one of institutional capacity to undertake the effort. The policy question is whether the selected institution can deliver the services and activities required. Time and again, policy initiatives are handed off to organisations and institutions incapable of assuming the added responsibilities. When this happens, the policy cannot be well executed. The subsequent impacts are often weak, if not inexistent. Assessing capacity before the decision is made to add responsibilities to any institution can help reduce the possibility of later failure.

At this stage, a final cluster of information needs builds on the previous central point. Here questions relate not so much to capacity as to the nature of the response, once taken. Concerns should focus on: the expertise and qualifications of those responsible for the implementation effort; the interest shown by management and staff in careful implementation; the controls in place regarding the allocation of resources; the organisational structure and whether it adequately reflects the demands upon the organisation to respond to this initiative; what means existed in the organisation to decide among competing demands, the strategies the organisation used to clarify misunderstandings or ambiguities in how it defined its role in implementation; and finally, what kinds of interactive information or feedback loops were in place to assist managers in their ongoing efforts to move the programme towards the stated objectives of the policy. It is information of precisely this type that Robert Behn (1988) states is critical to managers as they struggle to "grope along" and move towards organisational goals.

Phase four -- Policy accountability

The final stage in the policy cycle comes when the policy or programme is sufficiently mature that one can address questions of accountability, impacts, or outcomes. Here again, the information needs are different from the previous three stages. The contributions of educational researchers can be pivotal in assessing the consequences of the policy and programme initiative.

First there is the matter of what the policy or programme did or did not accomplish. Were the objectives of the programme met? Research can help specifically in this regard by addressing the fundamental question of cause and effect. There may well have been many changes in the problem or condition over the length of time that the policy was in effect, but it is not self-evident that these changes were caused by the policy. Many other factors could have impacted upon the condition or problem to bring about the observed changes.

A positive outcome cannot be a worsening of a condition, for example no change in the original status that first prompted the policy response. Developing local intervention programmes that stall any further growth in the number of child abuse cases could be considered a positive outcome. So too could be the efforts of school administrators to stall a trend toward increasing numbers of school-leavers. The key question, of course, is whether the evidence of no growth in a problem or a condition can be attributed to the efforts of the programme.

The challenge for the educational researcher is to parcel out which changes in the condition are caused by the efforts of the policy or programme and which are not. This is one of the most

difficult methodological challenges facing those in educational research. Cause and effect relations are difficult to establish in the best of circumstances. In the case of most policies and programmes, the circumstances are not the best for any number of reasons -- not the least of which may be the lack of good data, lack of clear documentation of the nature of the problem, lack of a clear focus in the efforts of the programme ("What did they all do?"), and deliberate changes in the objectives of the programme over time. All these factors and more can hinder the efforts of the researcher to determine just what impacts the programme has had on the condition.

When a programme or policy reaches the stage that it is appropriate to discuss and assess impacts, the use of carefully crafted research strategies can offer information on both anticipated and unanticipated outcomes, changes in the understandings and perceptions as a result of the efforts of the policy, the direction and intensity of social change that results from the policy, and the strengths and weaknesses of the administration/organisational structure that has been used to operationalise the programme. Careful research can also be explicit about the measures being used to assess impacts and programme influences. The decision on how to measure cause and effect are tightly woven with decisions on what to measure.

There is an additional dimension to this aspect of policy accountability that bears mention at this point. It has to do with whether the original objectives and goals of the policy have stayed in place through implementation. One message that has come back to policy-makers time and again is this: Do not take for granted that what is intended to be established or put in place through a policy initiative will be what one finds after the implementation process is complete. Programmes and policies make countless mid-course corrections, tacking constantly with changes in funding levels, staff stability, target population movements, political support, community acceptance, and the like. The end result is that it is often difficult to say whether or not a policy is successful because that policy has been in a constant state of flux. Judging the success of a constantly moving target is an extremely difficult endeavour.

Another contribution that research can make at this phase is the focus on accountability. This is not an area where one finds educational researchers, but it should be. Here the emphasis shifts from that of external impacts to Internet organisation and processes. The research can address such concerns as the quality of management supervision, leadership of the organisation with a clearly articulated vision and goals clearly understood by staff, the attention to processes and procedures that strengthen the capacity of the organisation to implement the policy objectives, the use of data-based decision making, and the degree of alignment or congruence between the leadership and the staff. All of these issues speak to the capacity of an organisation to effectively mobilise itself to provide an appropriate response to the policy initiative. If the organisation is not in a position to do so, then there are clear issues of accountability that rest with the leadership.

There are also concerns with management accountability that have to be assessed whenever programmes are to be re-funded or re-directed. Some of these concerns deal with impacts on the programme or condition while others focus on the internal order and logic of the organisation itself. Stated differently, it is important during the accountability phase to determine the degree to which any changes in the condition or problem can be directly attributed to the programme and whether the programme optimised or sub-optimised the impact it had. Likewise, it is important to ascertain whether the presence (or absence) of any documented impacts is due to the coherence of the policy formulation, or to the nature of programme implementation, or both. Doing so necessitates the complex assessment of what impacts can be attributed to the policy and what to its successful implementation.

A concluding observation

In reviewing this assessment of the potential contributions of educational research to the policy arena, it is apparent that the contributions are still more in the realm of the potential than the actual. There is no broad based and sustained effort within the contemporary social science communities to address the information needs of policy-makers from the point of view of the policy-makers. Again, to note Sally Brown, educational researchers do not know their policy customers. The failure to come to know the logic and culture within which policy-makers work leaves educational researchers continually guessing as to what is needed when, by whom, and in what form.

Yet it is also clear that opportunities are there for contributions to be made -- not in every instance and not on the researcher's terms, but there are windows of opportunity. The issue of this paper and, indeed, of this conference, is one of understanding how to link the social science and educational research communities to their policy customers. The analysis of different strategies for building such linkages merits a separate paper. Suffice it to say here that much hard thinking, careful listening, and numerous exploratory efforts will be required for the potential to become the actual. The issues of institutional cultures, policy-makers taking the time to tell researchers (and making sure the researchers listen) to what they do need and when, academic reward systems, publication requirements, funding sources, and methodological limitations are but six among many that will have to be addressed.

But beyond the resolution of (or at least the careful thinking on) these issues is the fundamental question of whether there is the will among educational researchers to shift their perspective and come out of their ethnocentric world view. If they are unwilling, then the potential will be just that. Much of what has been written here will remain speculative unless and until there is some consensus among educational researchers that making this transition is worthwhile. Treating policy-makers as customers or clients clearly involves a loss of control in setting policy research agendas, but I would suggest it is vital to any systematic basis for utilisation.

I cannot help but believe that the policy communities in many countries are ready for and would be receptive to efforts by educational researchers to address fundamental issues of educational governance as they come into the policy arena. The issue is the willingness of educational researchers to accept the invitation.

BIBLIOGRAPHY

BEHN, R. (1988), "Managing by groping along", *Journal of Policy Analyses and Management*, Vol. 7, No. 4.

BROWN, S. (1994-95), "Research in education: what influence on policy and practice?", *Knowledge and Policy*,Vol. 7, No. 4, Winter.

CHELIMSKY, E. (1985), "Old patterns and new directions in program evaluation," in E. Chelimsky (ed.), *Program Evaluation for Public Administration*, American Society, Washington, DC.

CHELIMSKY, E. (1991), "On the social science contribution to governmental decision-making", *Science*, No. 254.

GUBA, E. (1984), "The effects of the definitions of policy on the nature and outcomes of policy analysis", *Educational Leadership*, Vol. 42, No. 2.

HARGROVE, E. (1985), *The Missing Link: The Study of the Implementation of Social Policy*, The Urban institute Press, Washington, DC.

JONES, C. (1982), *The United States Congress*, Homeward, Il, Dorsey Press.

KINGDON, J. (1995), *Agendas, Alternatives, and Public Policies* (2nd edition), Harper Collins, New York, NY.

LINCOLN (eds.), *Handbook of Qualitative Research*, Sage Publications, Thousand Oaks, CA.

NAKAMURA, R. and F. SMALLWOOD (1980), *The Politics of Policy Implementation*, St Martin's Press, New York, NY.

PRESSMAN, J. and A. WILDAVSKY (1984), *Implementation* (3rd edition), University of California Press, Berkeley, CA.

RIST, R. (1989), "Management accountability: the signals sent by auditing and evaluation", *Journal of Public Policy*, Vol. 9, No. 3.

RIST, R. (1990), *Program Evaluation and the Management of Government: Patterns and Prospects Across Eight Nations*, Transaction Books, New Brunswick, NJ.

RIST, R. (1990), "Program evaluation in the United States general accounting office: reflections on question formulation and utilization", in R. Conner *et al.* (eds.), *Advancing Public Policy Evaluation: Lessons from International Experiences*, Elsevier, Amsterdam.

RIST, R. (1994), "Influencing the policy process with qualitative research," in N. Denzin and Y. Lincoln (eds.), *Handbook of Qualitative Research*, Sage Publications, Thousand Oaks, CA.

SALAMON L. (ed.) (1989), *Beyond Privatization: The Tools of Government Action*, The Urban Institute Press, Washington, DC.

TOULEMONDE, J. and RIEPER O. (eds.) (1996, forthcoming), *The Politics and Practice of Inter-Governmental Evaluation: Lessons From Seven Countries*, Transaction Books, New Brunswick, NJ.

YIN, R. (1985), "Studying the implementation of public programs", in W. Williams (ed.), *Studying Implementation*, Chatham House, Chatham, NY.

4.2 Responses

Response *by Walo Hutmacher, Director*
Research Division of Sociolgy
Geneva Department of Education
Switzerland

Ray Rist's speech was provocative and it hits home because there is an element of truth in what he says. However, his argument over-simplifies and generalises that truth. My own knowledge of the educational research community suggests that the picture is more diverse and not as clear-cut as Ray Rist believes. There are, of course, "ethnocentric" researchers like the ones Ray described as continually "moaning". But I also know researchers who are enthusiastic about their research, find their work fascinating and do not moan. There are researchers who are very much aware of practical or policy applications; there are some who are highly skilled in "selling" their expertise, sometimes with a touch of the demagogue about them. There are also researchers who are not interested in the immediate practical and policy implications of their work, as their main preoccupation is to produce new and original research. Sometimes these are excellent researchers whose work is thought-provoking and enables others to be better informed or more critical and to give better advice.

In short, the educational research community is diverse and this diversity is further accentuated by the multiplicity of disciplines: philosophers, historians, psychologists, educational psychologists, sociologists, economists, demographers, to mention but a few of the educational science fields. Further, these fields are at various stages in their development and have a general tendency to operate competitively, somewhat like the policy world. Knowledge is a matter of struggle and discussion.

There is clearly just as much diversity among policy-makers. Through the democratic process in our pluralistic societies they defend contrasting ideological standpoints or opinions. Some are in the opposition, others in government, some have comfortable parliamentary majorities, others do not, some are conservative, others progressive. The parliamentary election cycle means that they often do not look beyond a few years or so. Need I add that whilst (most) are experts in policy, it does not necessarily follow that they will be experts in education. That is normal and it was not for that that they were elected. But, it is a fact nevertheless, and a salutary one at that.

When policy-makers and researchers meet it really is two worlds coming together, each with different agendas, approaches, priorities and time frames which are sometimes poles apart and sometimes quite close. Meetings of this kind between different worlds are frequent in societies as they grow in complexity. However, it is not just as if any two worlds were coming together in the case of educational policy and research. Each time they meet also brings out the relationship between science and politics, that is to say between two institutional domains which, each in its own way, legitimately claim to define reality.

To explain what I mean by that, I would like to remind you at this point that one of the fundamental features of our civilisation is precisely the emergence of this particular institution known as science, an institution that produces knowledge considered as true but which is not subject to any control by Church or State. What happened to Galileo symbolises this slow, often conflictual process of the emancipation of science from Church and State. The condemnation placed on Galileo in 1633 was not lifted by the Vatican until 1992... after the Earth had revolved 359 times around the Sun! Perhaps this story amuses us because we are so convinced of the benefits that scientific progress has

brought during this time. I mention it here to emphasize that we cannot take the relationship between politics and science for granted. The more recent history of Soviet biology under the influence of Lysenko illustrates in another way the scientific and technical blind alleys that can result from subordinating research to politics.

In the case of educational research, and the social sciences in general, it is even more difficult than it is for the natural sciences to conceive and introduce the principle of the independence of research from politics. First, because they are young sciences and second, and clearly more fundamentally, because they tackle complex subject matters, as meant by Edgar Morin, *La méthode, Tome I, La nature de la nature*, Seuil, Paris, 1977, for example, and these are also inevitably political, in any case far more political than the subject matters covered by the natural sciences today. Research into the human world is engulfed by the human factor. How can the human world be studied according to scientific rules? While ideas on this subject have evolved a great deal over the last century, there are many epistemological choices, theoretical constructions and methodological approaches. And the ideologies tend to range behind those choices that produce the view of man and society that suits them. Consider, as an example, the conflict between behaviourism and constructivism in psychology. Within the scientific community itself, these different approaches are in fact perceived as always being both scientific and "political" in the widest sense of the term. Scientific debate on these issues can appear fairly pointless to casual observers, but serious policy-makers and administrators will recognise in it some of the key policy issues and some of the major policy challenges.

Thus we have a divided, diverse scientific community. And, on the other side, a divided, pluralistic policy arena. Perhaps the reason for researchers' frustration with policy-makers, and vice versa, is the matching problem that exists. What is the likelihood of a renowned educational scientist meeting, at the right time, a policy-maker who happens to be asking the same questions as he or she is in compatible "policy" terms? The Brownian movement currently governing encounters, accidental or planned, between educational researchers and policy-makers does not rate the likelihood as non-existent, but it does not necessarily rate it high either. However, both groups may be concerned to improve the chances of matching.

I am a sociologist and am privileged to run a research centre within the Geneva Department of Education. The research unit has been in existence since 1965, so we now have thirty years experience. The unit was originally set up because policy-makers requests for knowledge were going unanswered by the university faculties. So policy-makers created their own research instrument. This "in-house" research unit did not have a clearly-defined status or role to start with. Some work was criticised for hindering or disrupting the government or civil service. Some attempts were made to subordinate research to their interests. Gradually, however, research was recognised as performing a vital function of internal criticism which served to foster creativity amongst policy actors. Today, not only are we allowed to be disruptive, but we are positively encouraged to be so, to question received ways of thinking. Research has become a factor in the system's learning process. The agreement operating between the research unit and the education system gives the unit the status of a body that is administratively part of the Ministry but scientifically independent, in that we make our own epistemological, theoretical and methodological choices. We publish our findings uncensored and they enter the scientific arena. However, the government is not bound by our research findings, even though they are often drawn into the educational policy debate.

Naturally, it is the responsibility of the researcher to remember these few principles and to call for clarification of the roles and ground rules between science and policy. The main purpose of scientific work is to produce original knowledge in accordance with values recognised by the

scientific community. In this way, research can contribute to the knowledge base used by policy-makers, administrators and educationalists. I am not calling for these ground rules to be respected out of some ivory-tower puritanism.

The practical and policy implications of research are obviously welcome and desirable, but it would be dangerous to make research too dependent on short-term policy interests and discussions. This is moreover well accepted for research into cancer or AIDS, two areas where research findings are awaited with impatience but are late coming. In the field of education, researchers and policy-makers now need to feel concerned by the question of the independence of research. The quality and credibility of the knowledge it produces are at stake.

Response *by Martyn Roebuck, HM Chief Inspectors of Schools*
Research and Intelligence Unit
The Scottish Office
United Kingdom

Though presently part of the panel of respondents as a member of a national inspectorate, I also have the policy responsibility in the Scottish Office for educational research, and for its commissioning. I will be speaking mainly from this standpoint and hope my emphasis does not thereby imbalance the respondent input.

I recognise much in the paper which Ray Rist has provided, though there is quite a difference between the written version and his presentation this morning -- body language of course adds to it! He certainly achieved the objectives of the Conference organisers in stimulating reaction. The buzz at coffee time was far above the norm, with all due respect to other speakers, or perhaps the coffee is taking effect.

The paper was stimulating, and well-targeted, in provoking reaction. Unusual for a US paper, it actually quotes sources outside the United States! Not only that, he obviously researched the respondents closely, since the quote is from Sally Brown who lives not far from me, and with whom I frequently discuss issues of policy-oriented research. Though somewhat exaggerated, I recognise his main argument. It is obviously based on experience. At the same time it also reveals elements of certain administrators who mistrust research and experts and do not like professionals. Fortunately this is not the case with my immediate administrative colleagues.

The written paper inflates some points but omits two critical elements. One is the interface between researchers and policy-makers. Perhaps Ray Rist builds too much on the quote from page 64 in the OECD report entitled *Educational Research and Development: Trends, Issues and Challenges* (OECD, 1995). I think that he should have referred also to page 93 where a section on the policy system's handling of research appears. That is a very important part of the OECD report and one which should not be ignored. What sort of communication channels exist between researchers and policy-makers? How is knowledge handled? How is expertise handled? These are points that are well worth further examination. The other critical omission was his lack of emphasis of succinct summaries. In his presentation he compensated, and stressed them. The original paper is over critical of the research community's willingness and ability to provide such summaries.

Related responsibilities of government and researchers

I agree with the idea of trying to synchronise research information to the policy-cycle, but this is very difficult for researchers. The responsibility of those individuals within government who mediate the research, and other professionally-derived knowledge, for politicians and decision-makers must be taken into consideration. Mediators are really the ones who should be making the decision about timing. They should be ensuring that research is commissioned at an appropriate time and that knowledge is reviewed and cumulated, and then brought together in a consistent form so that it can facilitate decision-making. I run a unit which has the responsibility for co-ordinating the commissioning of research, and tries to ensure that research results arrive at the appropriate moment. We are presently trying to decide what research will be commissioned in 1996-97. It has to be valuable in 1998, 1999, 2000 and beyond. This can be a difficult task. Policy-makers have the prime responsibility, not researchers. They must try to predict and mediate within government.

Ray Rist allows himself to be very critical of researchers, which he was no doubt asked to be. In doing so he ignores important points about the research community, in particular that there are many demands on researchers beyond meeting the requirements of government in the presentation of their research. Some query whether they are servants of government or "proper researchers". They can be both, but this is a concern among some of the colleagues in the research community. They raise issues such as: "Is the project taking forward knowledge?"; "Is this research going to raise our status in the academic community?"; "Is it allowing us to pursue knowledge in an appropriate way?" If the work makes no sense to the researchers, then one must be wary of trying to commission it. There is an onus on researchers to be timely, but they also must be prepared to advise policy-makers.

Ray Rist does make reference to some other sources of information beyond research. I think that it is worth reminding ourselves of these again, in particular: basic statistical data, which is important in relation to indicators; and inspection systems. Inspection has an interesting relation to research, which it may resemble. In the past we were asked frequently about our inspection function, and some suggested that it was not really validated and not comparable with "research". Inspection however now holds up very well in any such comparison, and it can be very powerful and valid. For example, the national school inspection programme in Scotland which is based on a carefully calculated statistics is aimed to detect a specific level of change in the school system over a 3 year period. The sample is chosen to allow us to identify significant changes in certain areas of school operation. The instruments and schedules are tested and checked. It is not research *per se*, but it is comparable in rigour with research. What we need is a situation where the information from inspection, and from research, can be brought together in a precise and efficient way.

The mediation function of personnel within government is critical and must be responsible for in-putting inspection-based data, advice, and statistical data, as well as for judging the input from pressure groups (which can be research-based), comments from the media and commissioned research, and for examining all of these together. It also has to incorporate, within what Maurice Kogan refers to as the "plurality of knowledge", the range of data-types, and time-scales. Decision-makers frequently demand information immediately. They do not notify researchers in advance. This is perfectly reasonable, and the mediators processing of researchers' input should allow such use.

At the same time, from the researcher viewpoint -- particularly when it evaluates policy change -- research will have several audiences. Only one of these audiences will be the decision-makers. Another will be other researchers. Those others ensure that the research is employed in the institution, though financial support may well come from the government. There is a well founded belief that there are tensions here which affect the way in which critical research outcomes are delivered and publicised.

OECD interests

The respondents are asked to make some comments about possible future work for the OECD. What sort of topics might the OECD pursue in relation to Ray Rist's useful paper?

My first question is how OECD studies should relate, for example, to initiatives within the European Union Education Committee. Claude Thélot, during the French Presidency of the European Union, launched an initiative to support bi-lateral and multi-lateral studies within the European Community. Mark Frequin in his comments yesterday supported such bi-lateral and tri-lateral studies within the OECD. There can be tensions between such small-scale work and major international

comparative studies such as carried out by the IEA, which Barry White referred to yesterday, and which had furnished useful figures that worried the United States about the state of their education. Major international comparisons help give such broad signals, but they are not always appropriate for analysing educational systems. They supply limited information which is only directly relevant to any one national context or educational system.

One of the possibilities is to seek bi-lateral or small-scale studies perhaps linked to EU work, and in relation to what has emerged today. Second, should the OECD, for example, be extending its indicators' work or should it be examining how indicators are subsequently used by countries? Yesterday we were presented with a very useful analysis of OECD indicators as they applied to Flanders. I have not been able to read my way through the Flemish version and its interpretation of the indicators, but in the context of Ray Rist's paper, how was that research information communicated to decision-makers at both a national and local level? What is the national strategy to facilitate such a communication flow? How is this strategy incorporating the effects of the decentralisation of power and financial control within educational systems? Is there a generic question here for the OECD?

Specific suggestions

I would emphasize three points from Ray Rist's paper:

1) We have referred to the ways of communicating knowledge to policy-makers at all levels, particularly those at national level. This is subject to modifications. It can be a new challenge for certain researchers, for not all researchers aim to produce succinct summaries which can be useful in the ways we have discussed. So there is an interesting question here as to whether there is a conflict between providing such popularised material and publishing the research for academic rating purposes.

2) At the national level, and viewing governing as a "tribalistic exercise", which was Maurice Kogan's other phrase, a second study could examine the knowledge resources actually in use, and the mediation mechanisms. We could take as a particular example an issue (policy or development) of interest to a number of countries, and look at the mechanisms used for disseminating, obtaining and using that knowledge. How do the mediating organisations and groups referred to on page 93 of the OECD report operate? What are their strengths and weaknesses? Can we learn from studies in one or two countries as to how they handle and weigh different types of information to aid policy and decision-making?

3) Research at the national level is only one part of the input, but it is a very important part, because it is tied in with the future of education communities, and with the health of the educational system. If research is to be a key input, it is important to consider how the research base is sustained. It cannot be sustained by feeding off the crumbs of the policy-making system. One professional problem in commissioning research is to make sure that from the researchers available we can commission studies. Support for a research base in Scotland can be quite difficult because a topic chosen for research by policy-makers may not always be matched by suitable researchers. Inversely, topics which researchers may rightly feel important in the long-term (and in subjects where they are international leaders) are often not of interest to policy-makers at a particular moment.

Again at the national level, if research is a key input to policy-making, how is the research base sustained? This is of particular current interest in the United Kingdom which is moving through changes in higher education funding. These are putting quite new pressures on research communities, and causing institutions to sell and buy researchers and to close down departments which are not providing sufficient points for the institution research rating. What mixture of research methods, or types of commissioned and sponsored research, is likely to encourage the health and welfare of the research community so it may continue to provide research-based knowledge in a form which is succinct and well-suited to inform government decision-makers?

Response *by Micheline Scheys, Director of Strategic Policy*
Flemish Ministry of Education
Belgium

Professor Rist states that the communication problem between policy-makers and educational researchers should not be formulated in terms of the different phases of R&D projects but in terms of the policy cycle. It is of course very important to make the research community more sensitive to and better aware of the policy cycle. In order, however, to improve the quality of the communication between policy-makers and educational researchers and to guarantee a better dissemination of research results, policy-makers must change their attitude towards educational research as well.

The communication between knowledge and policy is a crucial dimension of the policy cycle. During this conference and the preceding ones, different speakers stated that the production and dissemination of policy-oriented knowledge can be approached through the concept of a communication triangle. The parties involved in that triangle are policy-makers, educational researchers and practitioners. In order to improve the quality of the communication between those actors, each one of them must change their attitudes and knowledge frame.

What can educational researchers do?

Educational researchers can commit themselves to raise the quality of educational research

Educational research must still be established as a well developed multi-disciplinary field of research. The production of educational knowledge is not a privilege of just one or a few scientific disciplines. Disciplines such as law, economics, sociology, socio-linguistics and philosophy and not just pedagogy or psychology have a major role to play in the production of educational knowledge.

Special care should be devoted to the training of educational researchers and to the development of methodology. When the design of educational research is guided by a multi-disciplinary approach, young researchers must get a specialised training in the research methods and relevant theories of the disciplines involved.

Educational research must not be limited to applied research

More attention should be paid to fundamental educational research and to theoretical reflection. As the concepts and approach of educational policy change, educational researchers must re-frame their theories and paradigms. Educational researchers must re-examine their own knowledge base. Professor in 't Veld pointed to the concept of lifelong learning and the paradigm shift that this concept brings in its wake. If the period of learning and training is no longer concentrated in a specific stage of life but covers the whole life course, much of human capital theory becomes obsolete. The idea that people invest time and energy in learning and training during one phase of their life in order to maximise future return does not fit the concept of lifelong learning.

Educational researchers must participate more in the public debate

Public debate about policy-questions and decisions should be fuelled more than is the case at present, by the expert opinion, the analyses and interpretations offered by educational researchers. In

that debate educational researchers can comment on their research results, but they can also contribute to a more precise framing and description of policy-problems. Researchers must enter public debate and open the discussion with the other bases of knowledge the policy-makers use. A larger participation in the public debate can improve the public pertinency of educational research and stimulate a more intense involvement of educational researchers in policy-formation.

International co-operation must be stimulated

In the field of international comparative educational research there exists a need of co-ordination. Without co-ordination overlapping organisations and initiatives will develop. More initiatives should be launched so that an international pool of knowledge experience and ideas can be constructed from which all can draw.

More attention should be paid to the formulation of research results

Ray Rist suggests that research reports submitted to policy-makers should not exceed four pages. If that were to be the case, it would become impossible for those responsible for policy, to check the quality of the research on which the recommendations are based. Therefore, I suggest that in the research reports educational researchers submit to policy-makers, more energy should be invested in the formulation of clear and succinct policy-conclusions and advises. A clear distinction must be made between research results and policy-advises and the latter have to be formulated in policy-terminology instead of research terminology.

What can policy-makers do?

Policy-makers must accept the limits of educational research

In the first place policy-makers have to admit that conducting research takes time and that not all policy-questions can be answered immediately. They also have to admit that not all policy-questions can or even need to be answered by educational research.

Policy-makers must abandon an all too exclusive positivistic approach of educational research

Policy-makers also need to change their paradigms. The relevance of educational research is not limited to problem-solving. Policy-makers must abandon the perception of a linear relationship between knowledge and policy, in which policy-makers define the problems, and then commission the research that must produce solutions to those problems.

Educational research must be seen more as a 'trial and error' -- process that produces a plurality of knowledge and understanding in conjunction with other bases of knowledge. Policy-makers have to admit that the logic of scientists differ from theirs and that research can or even needs to be chaotic in order to improve their knowledge base.

Policy-makers still need to be convinced to involve researchers in the different phases of the policy-cycle

Educational research must not be equated with problem-solving. Educational researchers can explore the tendencies of social evolution and its impact on the educational field. In that way, they can tackle the definitions of the scope and the content of the policy-problems. Another contribution of educational research to educational policy consists in evaluating policy innovations and implementations.

What can practitioners do?

If we state that in the production and dissemination of knowledge three parties are involved, we imply that practitioners not only have a role to play in the implementation of research results, but also in the production of knowledge and even in the elaboration of research.

Practitioners possess a lot of valuable experiential knowledge. Experiential knowledge can inform policy-makers and is used as a data pool by educational researchers. The knowledge production of practitioners can however be upgraded through research training. I therefore plead for the integration of educational research and theories in the training curricula of teachers. Making teachers acquainted with educational research contributes to the production of a researcher's mentality. Such a mentality and research competencies will stimulate practitioners to make a better use of research in their educational practice. It also forms an excellent foundation to integrate teachers in educational research and other bases of policy-oriented knowledge.

***Response** by Lynn Whitney, Manager Research Contracts*
Ministry of Education
New Zealand

Ray Rist made a number of points in relation to linking educational research to the policy cycle, but his caveat was, in his discussion of the role of educational researchers, that he was limiting his comments to those researchers who were attempting to have their research findings impact on policy-makers. He also appeared to limit his definition of policy-makers to those employed in developing policy for government.

He cites several mechanisms that are popularly advocated to improve the relationship between policy-maker and researcher (more stakeholder involvement, building trust with policy-makers, mobilising political support, keeping reports short, popularising research findings and providing materials to policy-makers on an on-going basis) and goes on to suggest that researchers should familiarise themselves with the four distinct phases of the policy cycle: agenda setting, formulation, implementation and accountability. He also provides a number of mechanisms in relation to each phase of the policy cycle that researchers can use to narrow the gap between the policy community and there search community.

The New Zealand educational researcher's perspective

It should be made clear at the outset that the following response to Ray Rist's paper is generated from within the research community of the Ministry of Education. Researchers outside this community will no doubt have a different perspective. It should also be pointed out that, while Ray Rist's emphasis was on the relationship between the research community and government policy-makers, the focus here is some what broader. Policy-maker also includes those at the local and institutional level. Schools, for example, develop policy in a number of areas specifically relating to the operation of their institution.

The structure in which Ministry of Education research is conducted

As an introduction to the repose it might assist to give a brief description of the structure of research activity in the Ministry. There are two sections within the Ministry responsible for the collection and provision of information on the education sector, the Research Section and the Data Management and Analysis Section. Both of these sections are located within the Policy Group.

The Research Section comprises three units that undertake research: the IEA unit, the Research unit and the Contract unit:

- the IEA unit manages New Zealand's participation in international research projects run under the auspices of the IEA (International Association for the Evaluation of Educational Achievement);

- research unit staff carry out survey and evaluative research, literature searches and reviews according to the priorities set by the Ministry; and

- the contract unit commissions or provides funding for a broad range of research conducted by independent researchers in universities, colleges of education, polytechnics, specialist research institutes and private enterprise. This unit draws on researchers from a range of disciplines including economics, accounting, mathematics, psychology, education and sociology.

The Data Management and Analysis Section comprises two units: the Demographic and Statistical Analysis unit and the Data Management unit. Data is collected from all sectors of the education system ranging from early childhood, through primary and secondary to the tertiary sector. Summaries of this data and analyses based on the data are published annually.

Factors which may facilitate linkages between the research and policy communities in New Zealand

Factors which may facilitate linkages (e.g. stakeholder involvement, building trust with policy-makers, mobilising political support, and providing materials to policy-makers on an on-going basis) between communities in New Zealand include:

- the relatively small size of the country both in terms of population and geography;
- the lack of federal/state demarcation;
- the emphasis placed on high quality information in an environment where change is commonplace;
- the relative accessibility of policy-makers and the number of interest groups involved in consultation processes; and
- generally positive relations between cultures in what is characterised as abi-cultural or multi-cultural society.

In addition to the above factors, which operate across a number of research communities, there are specific mechanisms which are used to optimise the impact of research on policy-makers. This applies whether the research is conducted in house or by the wider research community. For example, there search sections which co-ordinate and manage the programmes of research for the Ministry are housed within the Policy Group. This ensures knowledge of and input into the policy work programme and the policy cycle (i.e. agenda setting and policy formulation) and allows researchers to develop understanding of both current concerns and issues and those that are likely to arise in the future. Both directly commissioned research and knowledge accumulated within there search community can input into the setting of agenda and policy formulation.

The research programme is also able, through its connections with the wider operation of the Ministry, to respond to the other components of the policy cycle (i.e. implementation and accountability).

The sections co-ordinating and conducting research within the Ministry have developed a number of mechanisms for optimising the impact of research. These are incorporated into a critical path for each unit and may form the basis of performance assessment. It is important to stress that, in developing and applying these mechanisms to increase the relevance of the research, standards of

quality are a prime consideration for the researcher as are integrity and an independent view point. Mechanisms developed include:

Those to maintain professional standards and development:

Regular participation by way of visits and advisory activity with other institutions and organisations (e.g. New Zealand Council for Educational Research, universities, polytechnics) and research networks (e.g. New Zealand Association of Researchers in Education).

Those to maintain the relevance of research:

Regular consultation with policy-makers from other government departments;

-- involvement of policy and implementation groups in the drawing up of specifications for commissioned research (the consultation process for this activity also extends to other interested parties, for example practitioners, teachers unions, other government agencies); and

-- review of proposals submitted from within the research community by policy-makers and those who implement policy.

Those to address timeliness issues:

Researchers are asked to provide progress reports on their research at critical stages of policy development via written and verbal briefings, progress reports, seminars (both public and in-house). This is standard practice for long term research projects.

Those to address accountability issues:

Each project set up in the external programme of research is required to establish an advisory committee or steering group. Members of these groups are drawn from a wide range of stakeholders including academics, private research establishments, practitioners, unions, employer representatives and Ministry staff.

Those to disseminate information to stakeholders:

A variety of mechanisms are used to disseminate information and to increase the likelihood of the findings of the research impacting on stakeholders. Information from data bases and research projects is provided in verbal briefings, news sheets, public and in-house seminars, and published reports to the Minister, Ministry staff, the media, educational institutions and the public. Many publications are provided free of charge. In addition annual reports are distributed to the education sector. These reports list all research reports published by the Ministry in the previous financial year. The Minister of Education is provided with a copy of every report accompanied by a brief, prepared summary of the research.

CLOSING REMARKS

Policy and preparatory knowledge for policy-making

by Mr Luc van den Bossche, Minister Vice-President
and Flemish Minister of Education and Civil Service Affairs
Belgium

I have great pleasure in concluding this OECD conference on the sources of knowledge for education policy. The past series of conferences which have critically examined, the interplay of knowledge and policy was organised as a sequel to the meeting in Paris in November 1990, where the OECD Ministers of Education stressed the importance of maximising the development of knowledge potential for the preparation, evaluation and adjustment of education policy. The subject matter of this conference in Maastricht was prompted by the growing and changing needs regarding knowledge which are resulting from the changes under way in the policy currently pursued.

As we develop towards an information society, the public authorities are devoting more and more attention to preparatory knowledge for policy-making. Politicians and administrative bodies are experiencing a growing need for soundly developed knowledge as a basis for policy but also as a means of follow-up and of policy evaluation and adjustment. Changes to the implementation of policy have not only created a need for wider knowledge and more information, they also require a different type of knowledge and information.

Policy co-ordination

Policy is now being co-ordinated to a greater extent with foresight in light of potential future developments. New policy instruments, such as the strategic planning which was introduced in the activities of the Ministry of the Flemish Community last year, require a broad basis of knowledge consisting of scientific research findings, indicators, statistics and various databases. The formulation of strategic objectives and critical success factors requires measures for monitoring the development of the social context in which the policy is operating and the impact of that development on the field of policy concerned. It also requires efforts to keep to time scales, to draw up future scenarios and to carry out simulations.

It is not only for drawing up and developing general lines of policy, strategies for change and solutions to problems that the new-style policy needs knowledge; a well-developed knowledge base with which policy can be backed up is also absolutely essential for pinpointing, defining and describing relevant problems and bottlenecks. The quality of the policy pursued depends primarily on the knowledge of the field of policy concerned and on insight into the problems which arise there.

Since strategic planning is a continuous and recurrent process, preparatory knowledge for policy-making must support that process continuously. This means that the implementation of policy and the processes of change which are involved must be monitored closely and the impact and effects of those processes must be examined. Instruments must be developed with which the successes and failures of policy programmes can be evaluated promptly. Where initiatives are unsuccessful or have unforeseen consequences, policy must be adjusted as rapidly as possible. The new-style policy can be described as a strategic policy which requires specific efforts to develop the preparatory knowledge bases for policy-making.

The new-style policy

The new-style policy is also characterised by decentralisation and deregulation. Whereas former policy focused on the elaboration and formulation of laws and rules to achieve priority objectives, the new policy emphasises the aims without stipulating how they are to be achieved.

Measures to give educational establishments more autonomy and responsibility are also central to Flemish education policy. By introducing final achievement levels in education -- these are minimum objectives which students must have attained by the end of a certain period of instruction -- the authorities place only the aims of education in the foreground. They do not concern themselves further with the processes underlying the achievement of those aims. This means that, by reaching explicit agreements with society on the objectives to be achieved, educational establishments can themselves decide how their resources should be used to achieve those objectives. Those establishments will in the future have to act as guarantors of the achievement of their own objectives as well as those set by the public authorities.

The knowledge required for implementing a more autonomous policy is very different from that needed to support a more state-oriented form of policy implementation. In the context of autonomous and responsible educational establishments, the public authorities perform their function of quality supervision in a manner different to the practice in a context of centralised administration, and they also obtain different information. A shift is taking place in the knowledge base supporting policy-making towards output evaluation and meta-evaluation. This means that the phase in which information is collected is changing and that other instruments of analysis and evaluation must be developed.

Changing demands

Education is currently facing a steadily growing demand for knowledge, schooling and instruction. New quality demands are also being made, such as that for custom-tailored and life-long education and training. At the same time, policy-makers have to take account of the fact that financial means are limited. Education policy thus has to face the challenge of guaranteeing that high-quality education is provided and geared to demand. In order to carry this operation to a successful conclusion, accompanying measures and support from educational research and development and from other sources of knowledge are extremely important. Comparative research into various types of teaching methods and channels of education, differentiated learning processes, courses of action and modularisation, but also into alternative systems of financing, is particularly appropriate.

Internationalisation

As internationalisation progresses, the globalisation of society and the interdependence of various nation-states are steadily increasing. Consequently, the education policy of those nation-states can no longer be based exclusively on the information and knowledge that is obtained at the national level. The importance of international comparative research will therefore increase in the future. OECD's INES indicators project already provides interesting instruments for conducting international comparisons, but it is still overly restricted to quantitative indicators; more scope should be created for qualitative complementation and interpretative comparison of various education systems.

The number of networks for developing educational knowledge on the basis of international comparison and educational indicators is also steadily growing. What is more, some of the networks overlap. That is why I appreciate the agreement at the Lahti conference on the future of the INES project that efforts should be made to co-ordinate similar networks and indicator projects to a greater extent. Interdependence must not be confined to those nation-states treated as subjects of study, it must also become a feature of the instruments involved in that study.

Since regional differences are still considerable -- despite globalisation and interdependence -- it is often interesting to create networks for comparing knowledge between countries or regions which work in the same context or have certain common problems. A network has recently been set up linking Flanders, the Netherlands and the two German Länder, North Rhine-Westphalia and Lower Saxony, for the purpose of consolidating the knowledge base which can support and accompany policy in bordering countries and for identifying common or comparable problems.

Policy and research

Education policy requires not only educational knowledge extending beyond national frontiers, but also educational knowledge not restricted to the limits of scientific disciplines. Knowledge in support of education policy is obtained and built up from various disciplines; it is established through various forms of pluridisciplinary, interdisciplinary and transdisciplinary co-operation.

When speaking about knowledge for preparing education policy, it is educational research which first springs to mind. Educational research and development are undeniably the most important pillars for developing knowledge which is geared to education policy. They were also the subjects of the three previous conferences organised by the OECD on the topic of knowledge geared to policy.

A subject frequently broached at those conferences was the fact that relations between policy-makers and researchers are often difficult; researchers complain that the results of their work are not adequately publicised or applied in policy implementation, and policy-makers consider that researchers do not take adequate account of the specific questions which policy-makers expect research to answer or of the pace at which policy moves.

Pace of policy signifies the controversial issues which claim the attention of policy-makers and which call for solutions in the short or medium-term. But the pace of policy is also set by the policy cycle: preparation, implementation, application, evaluation, adjustment. Each phase of the cycle requires specific types of knowledge which are obtained through specific channels and with specific instruments. Researchers who want to supply knowledge which is geared to policy must not only take account of the hot topics of policy and their restrictive deadlines; they must also devote attention to the various phases of the policy cycle and the specificity of the knowledge required.

The development of strategic policy requires continuous interaction between policy and knowledge, constant feedback of policy-specific knowledge to policy and vice versa. Researchers must devote more time to the specificities of policy and the processes involved. And policy-makers, for their part, must learn to estimate and evaluate the limitations and limits of scientific research. Scientific research must not only be used to find solutions to the problems identified by policy-makers. It also provides knowledge which can be employed productively in the pinpointing and formulation of problems or used to elucidate certain specific problems.

I am convinced that this series of conferences on knowledge geared to policy and on educational research and development has produced adequate material for establishing a sound basis for developing the knowledge and information which policy needs. I hope that it will stimulate and enrich the debate amongst policy-makers and researchers and that education practitioners will also be involved more closely in the future in the production of policy-specific knowledge. Involvement of that nature helps to increase professionalism amongst teachers and contributes to the quality of education, which in the final analysis always forms the core of any education policy.

MAIN SALES OUTLETS OF OECD PUBLICATIONS
PRINCIPAUX POINTS DE VENTE DES PUBLICATIONS DE L'OCDE

AUSTRALIA – AUSTRALIE
D.A. Information Services
648 Whitehorse Road, P.O.B 163
Mitcham, Victoria 3132 Tel. (03) 9210.7777
Fax: (03) 9210.7788

AUSTRIA – AUTRICHE
Gerold & Co.
Graben 31
Wien I Tel. (0222) 533.50.14
Fax: (0222) 512.47.31.29

BELGIUM – BELGIQUE
Jean De Lannoy
Avenue du Roi, Koningslaan 202
B-1060 Bruxelles Tel. (02) 538.51.69/538.08.41
Fax: (02) 538.08.41

CANADA
Renouf Publishing Company Ltd.
1294 Algoma Road
Ottawa, ON K1B 3W8 Tel. (613) 741.4333
Fax. (613) 741.5439

Stores:
61 Sparks Street
Ottawa, ON K1P 5R1 Tel. (613) 238.8985
12 Adelaide Street West
Toronto, ON M5H 1L6 Tel. (416) 363.3171
Fax: (416)363.59.63

Les Éditions La Liberté Inc.
3020 Chemin Sainte-Foy
Sainte-Foy, PQ G1X 3V6 Tel. (418) 658.3763
Fax: (418) 658.3763

Federal Publications Inc.
165 University Avenue, Suite 701
Toronto, ON M5H 3B8 Tel. (416) 860.1611
Fax: (416) 860.1608

Les Publications Fédérales
1185 Université
Montréal, QC H3B 3A7 Tel. (514) 954.1633
Fax: (514) 954.1635

CHINA – CHINE
China National Publications Import
Export Corporation (CNPIEC)
16 Gongti E. Road, Chaoyang District
P.O. Box 88 or 50
Beijing 100704 PR Tel. (01) 506.6688
Fax: (01) 506.3101

CHINESE TAIPEI – TAIPEI CHINOIS
Good Faith Worldwide Int'l. Co. Ltd.
9th Floor, No. 118, Sec. 2
Chung Hsiao E. Road
Taipei Tel. (02) 391.7396/391.7397
Fax: (02) 394.9176

DENMARK – DANEMARK
Munksgaard Book and Subscription Service
35, Nørre Søgade, P.O. Box 2148
DK-1016 København K Tel. (33) 12.85.70
Fax: (33) 12.93.87

J. H. Schultz Information A/S,
Herstedvang 12,
DK – 2620 Albertslung Tel. 43 63 23 00
Fax: 43 63 19 69

Internet: s-info@inet.uni-c.dk

EGYPT – ÉGYPTE
Middle East Observer
41 Sherif Street
Cairo Tel. 392.6919
Fax: 360.6804

FINLAND – FINLANDE
Akateeminen Kirjakauppa
Keskuskatu 1, P.O. Box 128
00100 Helsinki

Subscription Services/Agence d'abonnements :
P.O. Box 23
00371 Helsinki Tel. (358 0) 121 4416
Fax: (358 0) 121.4450

FRANCE
OECD/OCDE
Mail Orders/Commandes par correspondance :
2, rue André-Pascal
75775 Paris Cedex 16 Tel. (33-1) 45.24.82.00
Fax: (33-1) 49.10.42.76
Telex: 640048 OCDE

Internet: Compte.PUBSINQ@oecd.org

Orders via Minitel, France only/
Commandes par Minitel, France exclusivement :
36 15 OCDE

OECD Bookshop/Librairie de l'OCDE :
33, rue Octave-Feuillet
75016 Paris Tel. (33-1) 45.24.81.81
(33-1) 45.24.81.67

Dawson
B.P. 40
91121 Palaiseau Cedex Tel. 69.10.47.00
Fax: 64.54.83.26

Documentation Française
29, quai Voltaire
75007 Paris Tel. 40.15.70.00

Economica
49, rue Héricart
75015 Paris Tel. 45.75.05.67
Fax. 40.58.15.70

Gibert Jeune (Droit-Économie)
6, place Saint-Michel
75006 Paris Tel. 43.25.91.19

Librairie du Commerce International
10, avenue d'Iéna
75016 Paris Tel. 40.73.34.60

Librairie Dunod
Université Paris-Dauphine
Place du Maréchal-de-Lattre-de-Tassigny
75016 Paris Tel. 44.05.40.13

Librairie Lavoisier
11, rue Lavoisier
75008 Paris Tel. 42.65.39.95

Librairie des Sciences Politiques
30, rue Saint-Guillaume
75007 Paris Tel. 45.48.36.02

P.U.F.
49, boulevard Saint-Michel
75005 Paris Tel. 43.25.83.40

Librairie de l'Université
12a, rue Nazareth
13100 Aix-en-Provence Tel. (16) 42.26.18.08

Documentation Française
165, rue Garibaldi
69003 Lyon Tel. (16) 78.63.32.23

Librairie Decitre
29, place Bellecour
69002 Lyon Tel. (16) 72.40.54.54

Librairie Sauramps
Le Triangle
34967 Montpellier Cedex 2 Tel. (16) 67.58.85.15
Fax: (16) 67.58.27.36

A la Sorbonne Actual
23, rue de l'Hôtel-des-Postes
06000 Nice Tel. (16) 93.13.77.75
Fax: (16) 93.80.75.69

GERMANY – ALLEMAGNE
OECD Bonn Centre
August-Bebel-Allee 6
D-53175 Bonn Tel. (0228) 959.120
Fax: (0228) 959.12.17

GREECE – GRÈCE
Librairie Kauffmann
Stadiou 28
10564 Athens Tel. (01) 32.55.321
Fax. (01) 32.30.320

HONG-KONG
Swindon Book Co. Ltd.
Astoria Bldg. 3F
34 Ashley Road, Tsimshatsui
Kowloon, Hong Kong Tel. 2376.2062
Fax. 2376.0685

HUNGARY – HONGRIE
Euro Info Service
Margitsziget, Európa Ház
1138 Budapest Tel. (1) 111.62.16
Fax: (1) 111.60.61

ICELAND – ISLANDE
Mál Mog Menning
Laugavegi 18, Posthólf 392
121 Reykjavik Tel. (1) 552.4240
Fax: (1) 562.3523

INDIA – INDE
Oxford Book and Stationery Co.
Scindia House
New Delhi 110001 Tel. (11) 331.5896/5308
Fax: (11) 332.5993

17 Park Street
Calcutta 700016 Tel. 240832

INDONESIA – INDONÉSIE
Pdii-Lipi
P.O. Box 4298
Jakarta 12042 Tel. (21) 573.34.67
Fax: (21) 573.34.67

IRELAND – IRLANDE
Government Supplies Agency
Publications Section
4/5 Harcourt Road
Dublin 2 Tel. 661.31.11
Fax: 475.27.60

ISRAEL – ISRAËL
Praedicta
5 Shatner Street
P.O. Box 34030
Jerusalem 91430 Tel. (2) 52.84.90/1/2
Fax: (2) 52.84.93

R.O.Y. International
P.O. Box 13056
Tel Aviv 61130 Tel. (3) 546.1423
Fax: (3) 546.1442

Palestinian Authority/Middle East
INDEX Information Services
P.O.B. 19502
Jerusalem Tel. (2) 27.12.19
Fax: (2) 27.16.34

ITALY – ITALIE
Libreria Commissionaria Sansoni
Via Duca di Calabria 1/1
50125 Firenze Tel. (055) 64.54.15
Fax: (055) 64.12.57

Via Bartolini 29
20155 Milano Tel. (02) 36.50.83

Editrice e Libreria Herder
Piazza Montecitorio 120
00186 Roma Tel. 679.46.28
Fax. 678.47.51

Libreria Hoepli
Via Hoepli 5
20121 Milano Tel. (02) 86.54.46
Fax. (02) 805.28.86

Libreria Scientifica
Dott. Lucio de Biasio 'Aeiou'
Via Coronelli, 6
20146 Milano Tel. (02) 48.95.45.52
Fax. (02) 48.95.45.48

JAPAN – JAPON
OECD Tokyo Centre
Landic Akasaka Building
2-3-4 Akasaka, Minato-ku
Tokyo 107 Tel. (81.3) 3586.2016
Fax. (81.3) 3584.7929

KOREA – CORÉE
Kyobo Book Centre Co. Ltd.
P.O. Box 1658, Kwang Hwa Moon
Seoul Tel. 730.78.91
Fax. 735.00.30

MALAYSIA – MALAISIE
University of Malaya Bookshop
University of Malaya
P.O. Box 1127, Jalan Pantai Baru
59700 Kuala Lumpur
Malaysia Tel. 756.5000/756.5425
Fax. 756.3246

MEXICO – MEXIQUE
OECD Mexico Centre
Edificio INFOTEC
Av. San Fernando no. 37
Col. Toriello Guerra
Tlalpan C.P. 14050
Mexico D.F. Tel. (525) 665.47.99
Fax. (525) 606.13.07

Revistas y Periodicos Internacionales S.A. de C.V.
Florencia 57 - 1004
Mexico, D.F. 06600 Tel. 207.81.00
Fax. 208.39.79

NETHERLANDS – PAYS-BAS
SDU Uitgeverij Plantijnstraat
Externe Fondsen
Postbus 20014
2500 EA's-Gravenhage Tel. (070) 37.89.880
Voor bestellingen: Fax. (070) 34.75.778

NEW ZEALAND – NOUVELLE-ZÉLANDE
GPLegislation Services
P.O. Box 12418
Thorndon, Wellington Tel. (04) 496.5655
Fax. (04) 496.5698

NORWAY – NORVÈGE
NIC INFO A/S
Bertrand Narvesens vei 2
P.O. Box 6512 Etterstad
0606 Oslo 6 Tel. (022) 57.33.00
Fax. (022) 68.19.01

PAKISTAN
Mirza Book Agency
65 Shahrah Quaid-E-Azam
Lahore 54000 Tel. (42) 735.36.01
Fax. (42) 576.37.14

PHILIPPINE – PHILIPPINES
International Booksource Center Inc.
Rm. 179/920 Cityland 10 Condo Tower 2
HV dela Costa Ext cor Valero St.
Makati Metro Manila Tel. (632) 817.9676
Fax. (632) 817.1741

POLAND – POLOGNE
Ars Polona
00-950 Warszawa
Krakowskie Przedmieacie 7 Tel. (22) 264760
Fax. (22) 268673

PORTUGAL
Livraria Portugal
Rua do Carmo 70-74
Apart. 2681
1200 Lisboa Tel. (01) 347.49.82/5
Fax. (01) 347.02.64

SINGAPORE – SINGAPOUR
Gower Asia Pacific Pte Ltd.
Golden Wheel Building
41, Kallang Pudding Road, No. 04-03
Singapore 1334 Tel. 741.5166
Fax. 742.9356

SPAIN – ESPAGNE
Mundi-Prensa Libros S.A.
Castelló 37, Apartado 1223
Madrid 28001 Tel. (91) 431.33.99
Fax. (91) 575.39.98

Mundi-Prensa Barcelona
Consell de Cent No. 391
08009 – Barcelona Tel. (93) 488.34.92
Fax. (93) 487.76.59

Llibreria de la Generalitat
Palau Moja
Rambla dels Estudis, 118
08002 – Barcelona
(Subscripcions) Tel. (93) 318.80.12
(Publicacions) Tel. (93) 302.67.23
Fax. (93) 412.18.54

SRI LANKA
Centre for Policy Research
c/o Colombo Agencies Ltd.
No. 300-304, Galle Road
Colombo 3 Tel. (1) 574240, 573551-2
Fax. (1) 575394, 510711

SWEDEN – SUÈDE
CE Fritzes AB
S-106 47 Stockholm Tel. (08) 690.90.90
Fax. (08) 20.50.21

Subscription Agency/Agence d'abonnements :
Wennergren-Williams Info AB
P.O. Box 1305
171 25 Solna Tel. (08) 705.97.50
Fax. (08) 27.00.71

SWITZERLAND – SUISSE
Maditec S.A. (Books and Periodicals - Livres et périodiques)
Chemin des Palettes 4
Case postale 266
1020 Renens VD 1 Tel. (021) 635.08.65
Fax. (021) 635.07.80

Librairie Payot S.A.
4, place Pepinet
CP 3212
1002 Lausanne Tel. (021) 320.25.11
Fax. (021) 320.25.14

Librairie Unilivres
6, rue de Candolle
1205 Genève Tel. (022) 320.26.23
Fax. (022) 329.73.18

Subscription Agency/Agence d'abonnements :
Dynapresse Marketing S.A.
38, avenue Vibert
1227 Carouge Tel. (022) 308.07.89
Fax. (022) 308.07.99

See also – Voir aussi :
OECD Bonn Centre
August-Bebel-Allee 6
D-53175 Bonn (Germany) Tel. (0228) 959.120
Fax. (0228) 959.12.17

THAILAND – THAÏLANDE
Suksit Siam Co. Ltd.
113, 115 Fuang Nakhon Rd.
Opp. Wat Rajbopith
Bangkok 10200 Tel. (662) 225.9531/2
Fax. (662) 222.5188

TRINIDAD & TOBAGO
SSL Systematics Studies Limited
9 Watts Street
Curepe
Trinadad & Tobago, W.I. Tel. (1809) 645.3475
Fax. (1809) 662.5654

TUNISIA – TUNISIE
Grande Librairie Spécialisée
Fendri Ali
Avenue Haffouz Imm El-Intilaka
Bloc B 1 Sfax 3000 Tel. (216-4) 296 855
Fax. (216-4) 298.270

TURKEY – TURQUIE
Kültür Yayinlari Is-Türk Ltd. Sti.
Atatürk Bulvari No. 191/Kat 13
Kavaklidere/Ankara
Tel. (312) 428.11.40 Ext. 2458
Fax. (312) 417.24.90

Dolmabahce Cad. No. 29
Besiktas/Istanbul Tel. (212) 260 7188

UNITED KINGDOM – ROYAUME-UNI
HMSO
Gen. enquiries Tel. (0171) 873 0011
Postal orders only:
P.O. Box 276, London SW8 5DT
Personal Callers HMSO Bookshop
49 High Holborn, London WC1V 6HB
Fax. (0171) 873 8463
Branches at: Belfast, Birmingham, Bristol, Edinburgh, Manchester

UNITED STATES – ÉTATS-UNIS
OECD Washington Center
2001 L Street N.W., Suite 650
Washington, D.C. 20036-4922 Tel. (202) 785.6323
Fax. (202) 785.0350
Internet: washcont@oecd.org

Subscriptions to OECD periodicals may also be placed through main subscription agencies.

Les abonnements aux publications périodiques de l'OCDE peuvent être souscrits auprès des principales agences d'abonnement.

Orders and inquiries from countries where Distributors have not yet been appointed should be sent to: OECD Publications, 2, rue André-Pascal, 75775 Paris Cedex 16, France.

Les commandes provenant de pays où l'OCDE n'a pas encore désigné de distributeur peuvent être adressées aux Éditions de l'OCDE, 2, rue André-Pascal, 75775 Paris Cedex 16, France.

5-1996

OECD PUBLICATIONS, 2, rue André-Pascal, 75775 PARIS CEDEX 16
PRINTED IN FRANCE
(96 96 03 1) ISBN 92-64-14895-7 – No. 48802 1996

KNOWLEDGE BASES FOR EDUCATION POLICIES

The importance of knowledge in emerging systems of lifelong learning has become crucial. Previous CERI work has clearly shown that policy-makers need relevant educational research and development to help determine educational policy. However, this publication underlines the necessity for policy-makers to also rely on other forms of knowledge bases than that of R&D such as inspector and indicator systems, both at national and international levels. The use of a broader range of knowledge bases highlights the important role of "mediators" who can facilitate the necessary communication and reciprocal enrichment between knowledge producers, decision-makers and practitioners.

The need to further clarify and understand this process of production, mediation and use of different forms of knowledge is likely to grow in importance in emerging learning economies and knowledge societies.

(96 96 03 1) UQC
ISBN 92-64-14895-7

9 789264 148956